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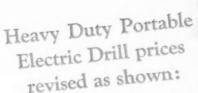
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Remember thisit isn't the number you roll out on the street. It's the money you have in the bank.

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Set Another Precedent

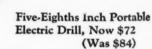




20,000		New Price \$72
Five eighths Inch	\$84	68
Half-inch Heavy Duty	78	72
Mine-sixteenths Inch .	84	
Nine-sixteenths Inch	98	88

The new prices apply on the standard Black & Decker Heavy Duty Drills. No change in material or design.

This radical lowering of the Heavy Duty Electric Drill price level is made possible by Quantity Production, which enables us to manufacture more



Operates on Direct or Alternating Current, Motor delivers considerably more than a half horsepower, air cooled, ball bearings, heat treated gears, and shafts, "Pistol Grip and Trigger Switch"

You can secure BLACK & DECKER Portable Electric Drills, Electric Screw Drivers, Electric Socket Wrenches, Electric Tappers and Electric Grinders from the leading Mill Supply, Machinery, Plumbing, Automotive and Electrical Supply Houses.

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The Weaver Crane was produced with the advice of hundreds of garage men who know what a crane *must have*—how strong it must be—what work it must do.

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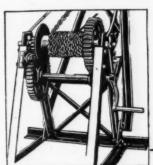
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Perfect Chrele PISTON RINGS

PRICE 60¢ EACH
(Up to and including 4 in. diameter)
(One to a Piston)

COMPRESSION TYPE 30c and up

A New Job The Old Ring Could Not Fill!

WHEN automobile engines were "speeded up," and high pressure lubrication was introduced, everybody assumed that the same old piston rings would work just as well as ever.

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More than 100 manufacturers now use it as standard factory equipment, and it has become the fastest selling replacement ring on the market!

One PERFECT CIRCLE Oil-Regulating ring located in the bottom ring groove prevents oil pumping, and seldom fails to give 1000 or more miles to the gallon of oil.

For complete information and valuable piston ring data, fill in and mail coupon on lower margin.

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Fill in your name and address on margin. Indicate whether Repairman

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Keep This Issue

THE copy of MOTOR AGE now in your hands is our first Sales and Service Reference Number. It is just what its name implies-a reference book made up of the things that you need to know all the year around to sell and service automobiles efficiently.

At first glance you may not appreciate the full value of what it contains. But save this copy, keep it where you can find it when you need it, and before the year is over you will have many occasions to cash in on the fact that you own a copy of this number.

Our editors have spent a great deal of time in an effort to make this number the most valuable reference book yet published for the use of the retail automotive trade. Here are a few of the unusual features it contains:

Motor Age's Flat Rate Manual covering nearly 300 operations on nearly every popular car on the American

A Painting Chart that will keep you from going wrong on this profitable class of business.

The Accessory Market is covered by an article which points out just what can be sold to owners of a number of the more popular cars.

How to Tell the Age of a Car is clearly pointed out in a table of serial numbers for all American cars.

These are only a few of the features. Unusually comprehensive maintenance data tables and many special articles on subjects fundamental to the sale and servicing of cars make up one of the best numbers we have ever published. Again we say - - - -

KEEP THIS ISSUE

Subscriptions accepted only from the Automotive Trade Entered as Second Class Matter Sept. 19, 1899, at the Post Office at Chicago, Ill., under Act of March 6, 1879.



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BATTERY PARTS



UALITY is the keynote of the COLE manufacturing policy. "The Best by Every Test" is the slogan and the ideal which has always guided this organization and inspired the development of all COLE products.

Rigid adherence to this exacting quality standard regardless of cost or competitive conditions has made the name COLE a yardstick by which the values of other similar products are measured.

This foundation of good-will is responsible for the success of COLE dealers and the rapidly growing demand for COLE products. You can meet competition and increase your sales and profits under the COLE quality standard.

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STUDEBAKER

Studebaker's investment in plants and facilities amounts to \$60,000,000, of which 70% has been added in the past six years. This insures the most modern methods and machinery for building fine cars to sell at low prices.

STANDARD SIX	SPECIAL SIX	BIG SIX
3-Pass. Duplex-Roadster \$1125 5-Pass. Duplex-Phaeton 1145 5-Pass. Coach 1295 3-Pass. Country Club Coupe 1345 5-Pass. Coupe 1445 5-Pass. Brougham 1465 5-Pass. Sedan 1595 5-Pass. Berline 1650	4-Pass. Duplex-Roadster . \$1495 5-Pass. Duplex-Phaeton . 1495 4-Pass. Sport Roadster . 1645 5-Pass. Coach 1595 4-Pass. Country Club Coupe 1695 5-Pass. Brougham . 1795 4-Pass. Victoria . 1895 5-Pass. Sedan . 2045 5-Pass. Berline . 2120 Prices f. o. b. factories	7-Pass. Duplex-Phaeton \$1875 5-Pass. Coupe

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11TAVENUE & BANNOCK

DENVER, COLORADO

March 4, 1925.

Mr. F. E. Moskovics, President, Stutz Motor Car Company. Indianapolis, Indiana.

Dear Mr. Moskovics:

You asked me to write and tell you how I made such a wonderful success of handling the --- car in a city of approximately 200,000 people. I will go back to a little ancient history and tell you how I actually started in business for myself. I started in with one of the largest automobile concerns in this city as an ordinary mechanic, and worked myself up to the position of general foreman. I then opened what you would call a general garage, catering to all classes of automobiles in repair work, but mostly to high grade cars.

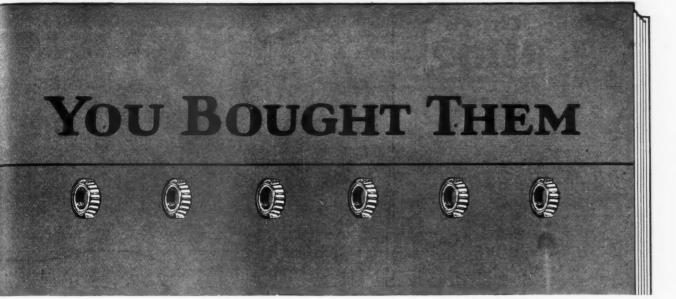
You will recall you came to see me along in August 1915, and told me about the new car which was about to come out. If I remember correctly, you had a great deal to say about the designing and marketing of this car. You impressed me to such an extent that I took on the account and with the cooperation of a fine factory organization, of which I always considered you the head, I accumulated over \$200,000. Today I own my own building which cost \$160,000. The equipment and all I have invested here comes to a little over \$200,000, all of which is clear with the exception of \$40,000 and I expect to clear this up within the next year or two.

'I have come across a good many mechanics who are situated today in about the same circumstances as I was, with the same possibilities of making good that I had. They have made friends with a lot of well satisfied customers, who would be willing to go down the line with them, but it seems that lack of confidence in themselves is holding them back from going ahead. I will admit there was a time when I felt the same way, due to lack of confidence in myself, but after my talk with you, you convinced me of the possibilities of making good with an article that was up to the minute. This in brief is the way I started making a success of the automobile business, and I know a good many others who could do the same thing.

Yours very truly,

Som Robert

I am inserting this letter on the chance that there are some other mechanics like Tom Roberts who would like to have the same talk I gave to him. If you are interested, just write me, today — F. E. Moskovics, President, STUTZ MOTOR CAR COMPANY OF AMERICA, INC., Indianapolis, Indiana.



The industry itself does not grow so fast as the use of Timken Tapered Roller Bearings. When there is a product of such sweeping influence in your business you want to know all about it. Buyers already know so much that total Timken output has reached 125,000,000 bearings. The whole story—from your prospect's point of view also—is told for you in the Timken book, "You Bought Them, Why?" Send for a personal copy, and for a salesroom supply!

-why?

THE TIMKEN ROLLER BEARING COMPANY, CANTON, O.



SPEEDROWAGON

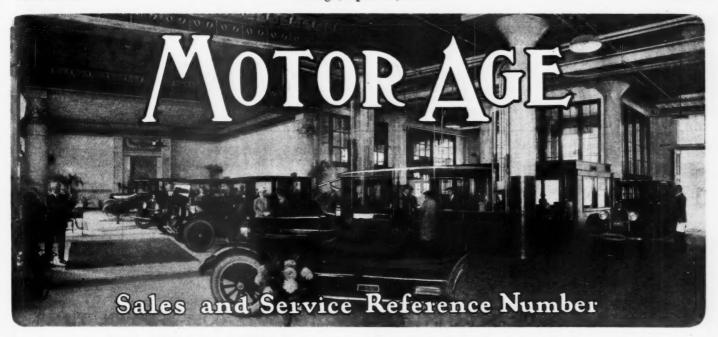
Capacity 500 to 2500 pounds

Twelve Standard

More than 100,000 in operation

Designed and Manufactured in the big Reo Shops—not assembled Due to proven ability to out-economize any other commercial car built ~ and according to any basis of computation ~ the Mighty Speed Wagon is the world's most favored unit for every condition of highway hanlage or city delivery.

Consequently. Speed Wagen dealers dominate the commercial car business in their terricories. Imply today for information on the sales franchise



Plenty of Room for More Sales

By SAM SHELTON

AVING grown in 25 years from nothing to the biggest single industry in the United States, the automotive business offers to those who are engaged in it, not a saturated market, but an ever-expanding field for profitable development.

Let there be no mistake about this: There is room today for more sales; there will be room tomorrow for still more sales, and for years to come even more and more sales will be not only possible but inevitable to provide for the automotive transportation requirements of a people determined to move themselves and their commerce rapidly, comfortably, conveniently and economically.

More vehicles mean more sales of fuel, lubricants, equipment, accessories, supplies and repairs. There is in this respect a constantly expanding market—one that is bound to grow for years and years.

The fact that there will be room for more sales for many years is amply demonstrated by these outstanding features of the industry's past and present development:

- 1. The Record of Continuous Growth in Production and Sales.—Year by year for 25 years, almost without retardation, the industry has forged ahead at a rate almost undreamed of.
- 2. Demonstrated Capacity of the Population to Absorb Motor Vehicles and Automotive Products.—More populous and prosperous states already have progressed so far ahead of other states in the matter of automotive products purchased and used that the mere process of catching up by the other states would provide a market almost equal to that already filled.
- 3. Highway Construction.—Automotive transportation at its best requires a hard-surfaced road. The building of such highways in this country is only now getting a good start. Every mile means more automotive transportation. And highway programs in some of the more progressive states are staggering in their proportions.
- 4. The Desire for Safety, Comfort, Convenience and Economy.—Means are constantly being devised to make motor vehicles more acceptable in one or more of these respects. This means more merchandise sales.
- 5. Greater Use of Motor Vehicles.—This follows construction of more and better highways and increased comfort and utility of the vehicle. The result is increased sales of supplies and repairs per vehicle.
- 6. Improved Character of Retail Distribution Agencies.—The development of this business to its just proportion requires that its merchants shall be men of the highest business capacity. The business itself is developing many merchants of this character, and its opportunities and rewards are attracting others of demonstrated capacity to it. The slothful and incompetent merchant will be crowded out by the march of progress.

These facts stand out as a herald of the better days that are coming to those who recognize now the great field for development that lies ahead in the automotive industry. There is no business that offers more to the competent, but none that gives less to the incompetent.

More sales are inevitable. They will be madeby those who today see the opportunity for profit.

Facts for Dealers

AUTOMOBILE INDUSTRY IS AMERICA'S LARGEST

1.	Motor vehicles	3,163,327,874
2.	Steel works and rolling mills	3,154,324,671
3.	Slaughtering and meat packing	2,585,803,898
4.	Foundry and machine shop products	2,237,807,997
	Communication of the communica	1 901 125 703

The figures are those of the United States Census of Manufacturers, 1923, and are reproduced from the 1925 edition of Facts and Figures of the National Automobile Chamber of Commerce.

MORTALITY AMONG CARDEALERS

PERCENTAGE OF DEALERS GOING OUT OF BUSINESS EACH YEAR.

	3 LACH I LAR
13%	1920
21%	1921
25%	1922
26%	1923
21%	1924

This Chart Shows Improved Conditions

AUTOMOBILE COST IS DOWN, OTHER ITEMS UP SINCE 1913

THE following compilation by the National Automobile Chamber of Commerce shows how the cost of automobiles has decreased since 1913 as compared with the rising cost of other commodities:

	Dollar Value 1913 Cost	Same Goods Cost Now
Automobiles	\$1.00	.71
Cost of living	1.00	1.67
Clothing	1.00	1.74
Shoes	1.00	1.65
House furnishings	1.00	2.16
Frame building	1.00	1.96

Millions in Maintenance

		No. of Serv- ice Estab-		Sales of Service Supplies and Parts	Total Sales Serv ice Supplies		
1920		lishments	ice Sta.	per Sta.	and parts		
			163	\$7,933	\$375,500,000		
1921			166	7,481	415,400,000		
1922	* * * * * * * * *		177	8,778	555,250,000		
1923		, , , , , , , , , , , , , , , , , , , ,	192	8,624	601,100,000		
1924		68 150	244	9,420	639,300,000		
14/3		08 150	760				

A complete survey of 1,000 service shops in cities and towns throughout the United States by the commercial survey department of the Chilton Class Journal Co. showed that approximately of 48 per cent of the shops are equipped with machine tools and 52 per cent use only hand tools. The same survey is showed that more than 75 per cent of the business is done by the shops with machine equipment. The following table shows the percentage of machine equipped and non-machine equipped shops in cities of variance.

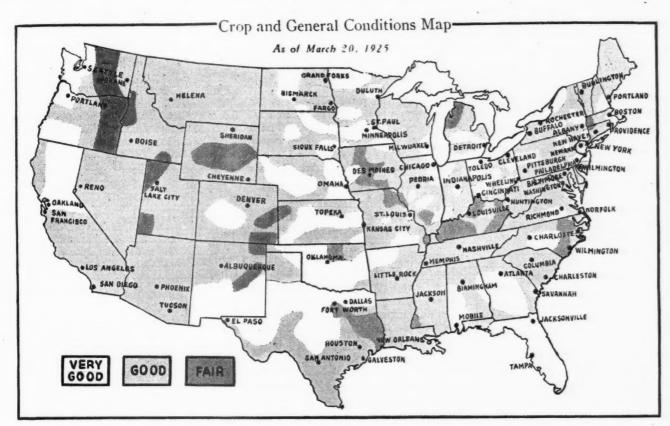
120.																Per
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Cities	of							n	11	T(d	ı	ir	ıe	equipped	chine Equipped
2,500																55
10,000								 							70	30
25,000															48	52
100,000	1	u	D					 							42	58

AVERAGE CAR SALES PER DEALER

OTHER CAR DEALERS FORD DEALERS \$59,425 \$73,069 8,037 DEALERS-\$587,263,500 28,173 DEALERS -\$1,674,200,500 \$57,360 1921 \$29,625 29,755 DEALERS-\$881,496,300 8,471 DEALERS-\$485,901,700 1922 \$48,911 \$58,032 9,326 DEALERS-\$541,207,490 28,982 DEALERS-\$1,417,538,602 851844 \$76718 10403 DEALERS-\$798,100,000 32,428 DEALERS-\$1665,000,000

\$74,090 1924 \$39,225

11,540 DEALERS-\$855,000,000 35,564 DEALERS-\$1395,000,000



Prepared by Archer Wall Douglas for LaSalle Extension University. Reproduced by permission

This Year's Opportunity

By CLARENCE PHILLIPS

ENERAL business conditions are entirely favorable for a good year in automotive merchandising. All signs indicate there will be ample opportunity for sales and profit making. Dealers who fall by the wayside will not be able to blame their fate upon a shortage in the bounty of providence. Those who finish the year with good profit showings will be those dealers who possess the

capacity and enterprise to capitalize an opportunity when it is offered.

That is the gist of the outlook for the rest of 1925.

Opportunity in any line of merchandising endeavor is founded primarily upon the buying power of the public. The extent of the public's buying power is regulated by various basic considerations which, molded together, form the foundation upon which prosperity rests.

And leading authorities agree that these underlying conditions are sound.

Proof of this underlying stability was clearly established by barometric evidences and actual business gains during the first quarter, the period showing a consistent and healthy movement forward notwithstanding a hesitancy in many lines, inherited partially from last year, and radical declines in stocks. Ordinarily such bearish raids as were witnessed in the stock market recently could have been expected noticeably to depress general commercial activity, but surveys show that nothing of the kind occurred. Business continued to gain and the sec-

ond quarter was begun with a feeling of popular satisfaction over the future. Comments by industrial leaders both in and out the automotive industry suggest a greater degree of confidence than has been manifested for many months. "Stability" is the big descriptive word used in the business surveys of banks. Stability is what we want.

Money rates are relatively easy and banks see no prospect of tight money. Credit is adequate for business requirements. Trade, measured by bank debits and car loadings during the first three months, established a record as compared with the corresponding periods of the three

A 1925 GOLD MINE

THE retail volume of the automotive trade in 1925 will a considerably exceed \$5,000,000,000, according to careful estimates made by James H. Collins of the Chilton Class Journal Co., Following is Mr. Collins' calculation of the probable volume of business for this year, made at the time of the National Automobile shows:

New	Pass	enge	r Ca	ırs.											\$1,900,000,000
New	Truc	ks .												 	375,000,000
Fuel	and	lubr	icant	s .										 	1,490,000,000
Tires	for	repla	acem	ent								0		 	600,000,000
Parts	and	ser	vice	sup	p	li	es	3.						 	685,000,000

Total\$5,325,000,000

This constitutes the modern gold mine for the automotive merchant. It is this year's opportunity. The figures are not a They are conservative estimates based on a careful analysis of business conditions and trends, and the progress of business thus far this year indicates that we are likely to exceed them rather than fall short of them.

In the accompanying article Mr. Phillips presents a conclusive analysis of present conditions, which should encourage and inspire every merchant in the automotive business.

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preceding years. Employment continues to increase.

Tabulations relating to car loadings plainly tell that goods have been moving from producer to consumer at a pleasing rate. Behind the clouds of wild stock transactions the law of supply and demand has been firmly asserting itself. Check up on these comparisons:

For the period between Jan. 3 and March 21 the total

of car loadings was 10,833,940.

The total for the corresponding period in 1924 was 10,679,726.

At the same time the less-than-carload shipments over this

At the same time the less-than-carload shipments over this period in the present year amounted to 2,883,682 against 2,776,153 cars in the same period of 1924. With respect to shipments of production's and consumption's necessities 1925 made a better start than did 1924 and the period to which we point was one which was well shaken up by erratic influences that conceivably would retard or demoralize the actual business movement of a less sturdy season.

Business Barometers

Going further we find that life insurance written in the first three months exceeded the high corresponding period of 1924 by 11 per cent-and that receipts of 50 of the largest postoffices during March showed a gain of 6 per cent over March, 1924. And when we think of the postoffice volume we naturally think of that excellent barometer, the mail-order houses. Montgomery Ward & Company exported an increase of 13.87 per cent in business during March last, as compared with March, 1924, with an increase for the first quarter of the present year of 9.36 per cent. Sears, Roebuck & Company, the largest institution of its kind in the world, reported an increase of 14.01 per cent for

March, 1925, over March, 1924, and an increase of 15.35 per cent for the first quarter over the corresponding period of last year.

There is much significance in the showings just discussed. Mail-order catalog shoppers as a class are close buyers, the suggestion consequently being that these close buyers have loosened up. They have money to spend and they are spending it. Another important consideration is that the bulk of the mail-order patronage is made up of buyers in the smaller urban centers and rural regions, suggesting again that the farmer and persons in his particular sphere of local influence are in an improved cash position. Substantiation of this presumption is found in improvements already noted in transactions of the automotive trade with this division of our market. It is found again in implements, hardware, clothing and in the retail trade at large. Any doubt which existed earlier in the year as to the recovery of the rural industries has been positively dispelled. It is true that grain prices recently took a big sag, but there is good reason to believe that by harvest time good prices for grains will prevail. According to government estimates harvest time will find this

country with a wheat carry-over of but 51,000,000 bushels where the carry-over at that point last year was 113,000,000 and where it was 112,000,000 in 1923. Meanwhile Europe is short of wheat. The American wheat farmer has a bright outlook.

Another field where money will flow freely this year will be in the building industry. Following a survey recently conducted the Architectural Forum predicted building activity during 1925 to the extent of five billion dollars, which would repeat the record of 1924. A large propor-

tion of this huge total will go to carpenters, bricklayers, plasterers, painters and other members of the world's highest paid wage-earning class. More will go to contractors, architects, real estate men and an army of others of more or less importance in the division. Money will trickle into various avenues of enterprise from this five billion dollar project.

All basic factors, let it be said again, show that the general business structure is on solid ground.

Corroborative indices show that general business actually has been going ahead with a steady step, characteristic of the conservative-constructive period.

Healthy Production Trend

Manufacturers this year are holding production of passenger cars and trucks very close to the actual demand. It is significant, therefore, that since the first of the year the trend has been steadily upward. Production for March, although slightly below that for the corresponding month of 1924, exceeded the output for March, 1923, when the industry was rolling up its high record.

The following table shows the production in the United States for the first three months of this year and for the 12 months of the two preceding years:

	L	3
1923	1924	1925
January243,53	9 313,882	240,912
February 276,93	4 363,472	287,019
March355,03	376,075	362,017
April382,69	5 367,773	**********
May394,08	8 304,375	*********
June378,50	7 242,249	***********
July327,99	3 261,041	*********
August345,20	2 277,390	
September 327,54	9 387,386	**********
October365,18	9 285,570	********
November 312,99	255,059	********
December 303,18	3 200,477	************

Advance estimates indicate production for April will be in the neighborhood of 400,000.

Prosperous Year Ahead

Foremost analysts, in view of the healthful underlying tone and in view of logical expectations, see reasons to look for a prosperous year in both foreign and domestic commerce. It is important that our exports to other countries have followed a healthy trend and that a fine year in foreign trade is expected.

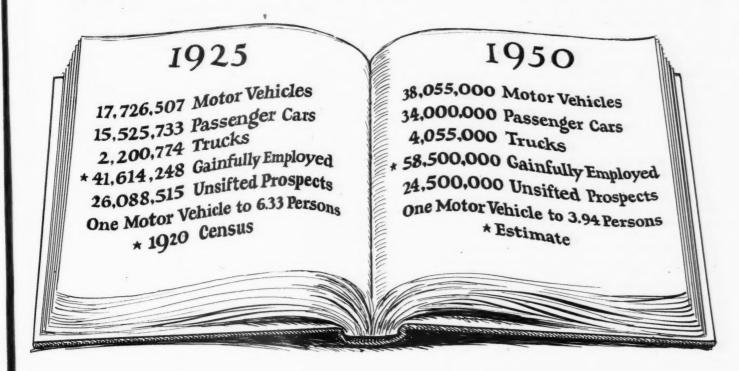
The year's outlook for the automotive retailer is consequently very pleasin. Those who are looking for a boom will be disappointed. Business will not be delivered on a silver platter. It

will come, as usual, on the heels of sane management, including conspicuously sane used-car policies and hard work.

The merchant will benefit to a limit fairly commensurate with the extent of "Championship Stuff" that goes into his methods of operation.

Enterprising members of the trade will make special plans to capture their part of the prospective farmer business. We cannot say how great the farmer volume will be, but its dimensions will be sufficient to justify special merchandising efforts. There will be campaigning among those fine prospects in the building industry for a whack at the five million dollar pie. All classes of highly paid labor will be considered in making the automobile prospect list. Hustling dealers will operate among the different local groups which they note are sharing most largely in the profits of general business health. They will develop plans to get the tourists' patronage and they will go after the replacement prospect. Seeking the prospect with the money is always the beginning point of a sales campaign. It should be easier to find such prospects this year than last.

When Our Business Doubles



Twice as Many Motor Vehicles as Are Now in Operation Are Destined to be in the Hands of Owners in Less Than 25 Years—Expansion in Sight for Many Years, According to Census Bureau Estimate

By CLARENCE PHILLIPS

HE remarkable growth made by the automotive industry in the past quarter century will cause anyone to marvel who gives this subject passing thought.

We marvel when we look about us and observe streets and highways thick with swiftly moving motor vehicles.

We marvel when we walk down any large city's "Automobile Row," noting the number and great variety of trade establishments thriving upon the motor vehicle's popularity.

We marvel at the fact that every cross-roads town has its garage and its filling stations and—as proud Americans—we swell when we think that with its registration of 17,726,507, or one motor vehicle for each 6.33 persons, the United States is operating approximately 80 per cent of the world's passenger cars and trucks.

Our natural reaction when we ponder this thrilling picture $is\ that\ the\ American$ automotive trade has reached proportions which are tremendous. So it has.

But there are many in the trade now who will live to see the present gigantic volume of automotive merchandising doubled—and even more than doubled.

The trade is destined for a steady expansion which will continue to grow as long as population continues to grow or until genius of the far-distant future comes forth with a practical instrument of private transportation that the world will accept in substitution of the automobile. It is safe to say that no one in the trade today, or no present tradesman's great grandchildren, will be on hand at the time of such a revolution.

To Double Within 25 Years

Within the next 25 years the automotive business will more than double its present proportions. That is not an extravasant statement. It is founded initially, with generous conservative allowance, upon an estimate made by the United States Census Bureau after an exhaustive study of its great store of statistical information.

And it is estimated by the Census Bureau that in 1950, which

is twenty-five years hence, this country will have a population of 150,000,000 and a motor vehicle registration of 38,055,000. The registration estimate includes both passenger cars and trucks.

A registration of 38,055,000 would amount to more than twice the registration as of January 1, 1925.

Doubling the present figure would give a registration of 35,453,014 which, on the basis of the government's prediction, should bring us to that stage some time previous to 1950.

How long before is open to more speculation. The discrepancy is 2,601,986, the number of new owners which would be added between the doubling point and 1950, when it is assumed the total of cars and trucks in operation will hit the 38,055,000 mark.

If we can assume also that the new owner sales of years immediately preceding 1950 will equal the annual average of new owner increase for the quarter century period in which 20,328,493 new motor vehicle owners must be found—the doubling point will be reached by 1947 or 1948.

813,140 Annual Average

The annual average car and truck sales to new owners in supplying this 20,328,493 market would be approximately 813,140 units. Applying this figure to the years of 1947, 1948 and 1949 there is produced a total new owner increase for those years of 2,439,420—which subtracted from the 38,055,000 registration expected by 1950, yields a difference of 35,615,580 and a total approximately double the registration as of January 1, 1925.

All of which, it is admitted, is pure "guessing" with the "guess" of the Census Bureau as the inspiration and excuse. No one is going to offer a definite prediction as to when the doubling point will be reached. We know, however, that it will be reached in the course of time and we know that in arriving at that stage the volume of automotive merchandising activity will steadily increase.

If the Census Bureau's estimate is correct the year 1950 will find us with an ownership ratio of 3.94 persons per motor vehicle. Twenty-five years ago such a ratio might have been held as out of reason but today, with California showing a ratio of 2.96 persons per motor vehicle, with Iowa's 3.99—and with twelve states under 5—the Census Bureau's estimate has a quite logical sound. Year by year the ratios of the different states have been growing smaller.

As has been pointed out, in our march toward the 38,055,000 registration and a ratio of 3.94 persons per motor vehicle, the trade will have to find new owners for 20,328,493 cars and trucks. If the passenger car proportion of this total corresponds with the present proportion of passenger cars to registration total it will be necessary to find new non-owning buyers for about 18,000,000 passenger cars between now and 1950

Over a spread of 25 years this means that there will be an average annual new owner increase in the passenger car field of 720,000, which is slightly less than half the new owner increase likely will be registered for the present year. The figure, judged by the present trend, looks small, but the smaller totals contributing to the average will be those of the later years in the quarter century period. There is reason to believe that consumption of cars by new owners will be relatively high for the next several years. In the past five years new owners reached a total of almost 9,500,000, or an average of 1,900,000 a year. Something approximating this same average might be realized over the next five years.

Economic Conditions To Rule

Economic conditions will govern largely in such year-to-year showings. They always do. In the depression of 1921 when there was widespread unemployment and when farmers were hard run the curve of new owner additions dropped to 1,231,-254. The toning up in 1922 sent the line upward to 1,775,080, with a peak of 2,853,802 in the prosperity of 1923 and another drop in 1924 when payrolls were down and when the farmer was counted as practically out of the picture.

These same forces are going to rule in the buying of the future. Exceptional prosperity will develop a relatively large crop of new owners just as the total will be held down by depression. This division of the market likely will grow more sensitive to the fluctuations of prosperity as the years advance for the fact that the unsupplied field will become more and more dominated by low income classes. With steady employment at good wages the worker may find he can buy a car this year which last year was out of the question. We can not say that the automobile is within the reach of all, but practically all are reaching for the automobile who are not already owners. It will require seasons of ample employment and industrial health to bring members of this great army to such a realization.

The new owner curve may rise with comparative sharpness in the first ten years of the 25 year trip, but considering an average of 720,000 a year, after ten years it may be expected to begin flattening out.

There may be a justifiable presumption that the big end of this new owner business—offering a market for 18,000,000 passenger cars—will be handled within the next ten years. Most likely it will.

Dealers in business today who remain in the ring 10 years from now can look forward to a long season of opportunity in that department of prospects.

Yet, that does not begin to measure the dealer's opportunity for the sale of cars.

Let us not overlook the constantly growing replacement business.

As the number of car owners becomes larger so in proportion will the extent of replacing worn out cars become larger. It has been estimated that the present year will call for around 1,750,000 replacement passenger car units. Accepting this figure, replacements for this year alone will amount to more than double the average annual sales to new owners permitted under the Census Bureau's forecast. As years wear on the proportional difference between these two figures will widen.

From a merchandising standpoint this means that the proportion of dealer effort in the sale of cars will continue to enlarge in concentration on replacement business. It will be

Production and Registration of Motor Vehicles 1895-1924

-	violor v c	Per Cent Gain Over Preceding	Pe Ga	r Cent in Over
Year	Production	Year	Registration	Year
1895	300	**********	300	*********
1896	600	100	900	200
1897	1,200	100	2,100	133
1898	2,400	100	4,600	119
1899	3,874	61	8,624	87.5
1900	5,000	29	13,824	60
1901	7,000	40	20,580	49
1902	9,000	23.5	28,755	39.6
1903	11,000	22	38,083	32.5
*1904	21,975	100	57,864	52
1905	25,000	13.8	77,988	34.5
1906	34,000	36	106,928	37
1907	44,000	29.5	142,061	33
1908	65,000	47.6	197,479	39
*1909	130,986	100	311,197	57.5
1910	187,000	43	468,497	50
1911	210,000	12.3	639,514	36.4
1912	378,000	82	944,000	47.8
1913	485,000	28.1	1,258,062	33
*1914	569,054	17.5	1,711,339	36
1915	892,618	56.7	2,445,666	43
1916	1,583,617	77	3,512,996	43.6
§1917	1,868,949	18	4,983,340	42
§1918	1,153,638	38	6,146,617	23
1919	1,974,016	+71	7,565,446	23
1920		+11.5	9,231,941	22
1921	1,661,550	-24.6	10,463,295	1.3
	2,659,064	+60	12,238,375	17
	4,086,897	+53	15,092,177	23
†1924	3,637,078	-11	17,726,507	15.8

*From U. S. Census Reports.

§Production figures compiled by Automotive Products Section, War Industries Board, from sworn statements by manufacturers.

†Includes, as in preceding years, the motor vehicles of U. S. design made in Canada.

more often a case of selling a new car to a car owner than in selling to a person who has never owned a car.

Along with the prospective expansions of opportunity for sales of cars will come, of course, great volume gains in demands for accessories, maintenance, parts and other essentials which the trade must supply.

With a registration of 17,726,507 we think, without mistake, that the field of automotive merchandising is of great dimensions, yet, peering somewhat into the future, it is evident that the trade has only well started.

Finding 18,000,000 New Prospects

Now that we know how many cars must be sold in 25 years to consist with the Census Bureau's prediction, suppose we take a glance at the prospects who will be available in this great merchandising movement. If the Census Bureau is shooting straight there will be, so it follows, enough prospects for the consumption of 18,000,000 more passenger cars than are registered at present, whereas, if the Census Bureau is too optimistic, our great body of potential owners will not be able to develop sufficient buying power for such an enormous absorption.

Will the prospects be available for the disposal of 18,000,000 passenger cars to a new owner market?

As a preliminary step suppose we scan the field of owners and possible future owners existing at present. In other words, how extensive is the field from which the present

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owners and prospects for more immediate years have been and are to be developed?

Using the 1920 census as a basis it is observed that owners of all cars now in use belong to a potential owner group of 41,614,248 persons. That is, not allowing for post-census increases, there were this many persons gainfully employed in the United States in 1920 who then were over 16 years of age. In this group there are owned, we might say, practically all the cars in operation. Those who have not actually bought cars compose the "unsifted prospect list" existing at present. To say that the unsifted list is this extensive is conservative enough, for since 1920 those who were but 16 years old have become 21 and the eight million increase, as estimated, in the nation's population since 1920 would more than make up for all who have died or passed beyond the prospect age limit.

The Unsifted Prospect List

At present the number of passenger cars owned within this group is 15,525,733, leaving an unsifted list of 26,088,515 prospects.

These, plus additions through population increases, will compose the unsorted prospect list of the years to come. In the process of sorting it is expected that the total "live" prospects for immediate consideration will be greatly reduced, but each year there is the chance that any of the remaining number, not already supplied with cars, will be in the current live prospect section. It remains that in viewing the future outlook all persons gainfully employed and over 21 years of age must be scrutinized as possible future buyers. That is the starting point in the effort to determine the extent of opportunity. There is the broad field from which the future's new owner business must be drawn.

And in 1920-39 per cent of the nation's population was gainfully employed.

If this same percentage holds good in 1950 and we have a population of 150,000,000 at that time the number of gainfully employed should be 58,500,000.

According to the Census Bureau's estimate 38,055,000 of this potential buying group will have been supplied with motor vehicles and, using present proportions, it can be assumed that

about 34,000,000 passenger cars will be in operation at that time.

With 34,000,000 of the 58,500,000 gainfully employed in the list of owners there would remain 24,500,000 of the gainfully employed still unsupplied with passenger cars.

Relying upon all these different speculations the unsifted prospect list in 1950 would amount to 24,500,000, which is within a million-and-a-half of the present unsifted list, as previously developed.

A considerably larger proportion of the unsifted list in 1950, compared with the situation of today, will be made up of persons in the lower income brackets, so that the number of "live" prospects will be proportionally smaller than the number at present. However, even at that time the field of new owner prospects will be of large proportions, including prospects among the large group of private truck owners who have not been considered in the foregoing analysis. It must not be overlooked that many truck owners are passenger car prospects.

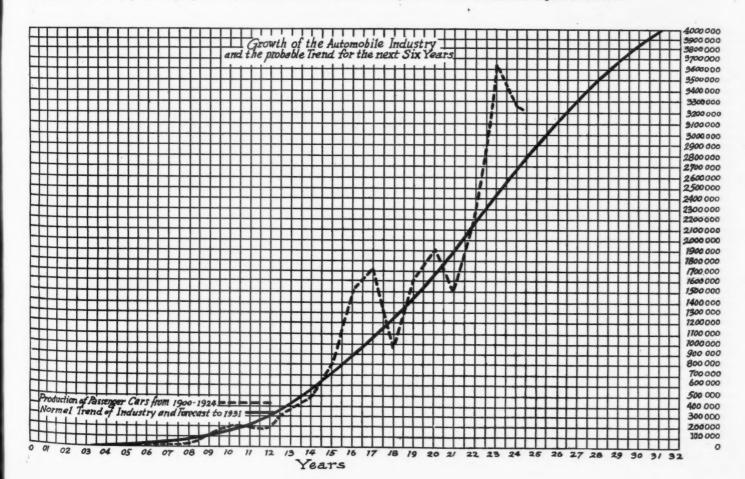
Opportunity in the field of automotive merchandising is as unlimited as in any other line of human endeavor. It is offered, not only with respect to more immediate years, but it will continue to be present in increasing, rather than diminishing proportions, as future decades slip back into history.

For even with an eventual tapering off in new owner sales there will be a steady expansion in replacement sales, an ever enlarging demand for maintenance and supplies.

No business in the world, dealing with articles of public utility, has before it greater promise of permanency or a more brilliant outlook.

Industry Still in Youth

Twenty-five years old, the industry still is in its youth and for an indefinite number of years it will develop with youthful vigor. Dealers of today who operate as real merchants, conducting business on a real business basis, are in a position to enjoy a long and rich period of merchandising profits. The door of permanent opportunity will be closed only to those dealers who compose the other class. It has been well demonstrated that automotive merchandising is a business in which only real business men can expect to thrive.



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Automotive sales follow this trail

A Hard Road to Easy Sales

THERE may not be a royal road to learning, but there is an easy street to more sales in the automotive industry.

And that easy street is the 174,000-mile hard surfaced highway that will traverse all corners of America when the Federal Aid Highway program is completed some few years from now.

To date hard surfacing has been applied to about 88,000 miles of that great sales-building highway and progress is being made at the rate of nearly 15,000 miles a year.

1925 Building Program

Last year the mileage completed with hard surface in all states under the federal aid program was 13,903 and this year's program calls for an even greater stretch. A total of 22,207 miles was improved. By the end of 1925 we may reasonably assume that the federal aid program will have been half completed. Another five years should see it nearing the full development at present contemplated.

Expansion in the Automotive Industry Will Follow the Trail of the Great Federal Aid Highway to Every Corner of America.

By SAM SHELTON

By that time the mileage of safe, economical and speedy highway, capable of bearing traffic the year round, will have been more than doubled and it does not take a prophet to foresee that a tremendous expansion in the automotive industry is bound to go along with this highway development.

As this great national boulevard threads its way through states and communities it will cause great increases in property values; it will create new wealth; it will open up new settlements; it will facilitate commerce; it will stimulate the whole fabric of American life, and it will promote a market for automotive products so vast that we have scarcely dreamed of it.

The automotive merchant who is tempted to become discouraged and to say that there is no future for this business should study the road building program of his state. It is almost certain that he will find extensive improvements under way right in his own community and every hard road that is built in his territory, or even near his territory, opens up a new list of prospective purchasers of automobiles, trucks, tires, accessories, supplies, repairs and all that goes with motor transportation.

Felt in All Communities

As fast as the great national boulevard is connected up to form a more or less continuous highway leading to all populous and scenic centers its effect is felt in

13,903 MILES OF FEDERAL AID HARD ROADS BUILT IN 1924

The following table shows the mileage of various types of hard roads built in the United states and Hawaii in 1924 under the Federal Aid program:

Type	Miles
Gravel	7,972
Concrete	3,728
Waterbound macadam	324
Bituminous macadam	947
Bituminous concrete	395
Brick	137
Other types	400

every community. The highway means that motor travel is possible to all corners of America and a motor vehicle becomes useful for something more than social calls and business trips to the nearest trading center. The motor vehicle becomes the favorite means of transcontinental travel for hundreds of thousands of open-air Americans.

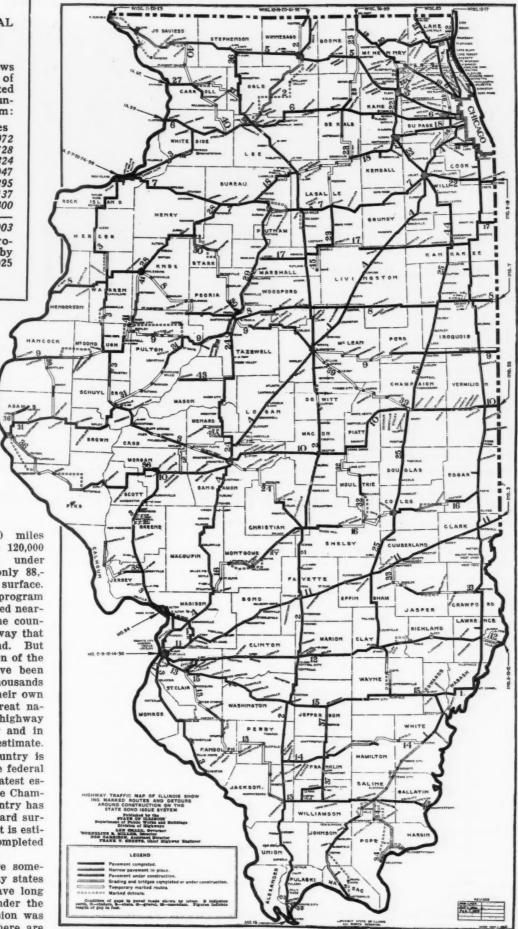
Need for More Highways

The tables reproduced in connection with this article

show that there are in the United States nearly 3,000,000 miles of highway, and of this about 120,000 miles have been improved, the federal aid program, but only 88,-000 miles with permanent hard surface. When the present Federal Aid program of 174,000 miles has been completed nearly all the important towns of the country will be connected by a highway that may be traveled all year round. But even then only a small proportion of the great highway mileage will have been improved. There will remain thousands of communities that will build their own short feeder lines to tap the great national boulevard, and thus the highway program will go on indefinitely and in magnitude that is impossible to estimate.

The highway story of the country is not by any means all told in the federal aid program. For instance the latest estimate of the National Automobile Chamber of Commerce is that the country has now a total of 470,000 miles of hard surfaced highway. Of this mileage it is estimated that 40,000 miles were completed in 1924.

The total figures, however, are somewhat misleading because in many states roads listed as hard surfaced have long since been worn out because under the old highway programs no provision was made for maintenance. Thus there are thousands of miles of so-called hard surfaced roads which are more damaging to



thousands of miles of so-called hard sur- An example of progress in paved highways. Illinois, as well as many other states, is rapidly faced roads which are more damaging to extending hard roads to every county.

motor vehicles than dirt roads that have been graded and maintained under the strict standards of Federal Bureau of Public Roads.

It is for this reason that we have selected the federal aid system as the standard by which to judge the progress of the country in modern road construction. Under the federal aid system highways are identified and marked to connect up various sections of the state building them and to join with highways in other states; bridges and culverts are constructed, curves are rounded and banked and every measure is provided for the safety and convenience of motor travel.

There can be no doubt that the greatest single factor in automotive expansion in the next few years will be high-

ADDITIONAL HIGHWAY FACTS

Total miles of surfaced highw	
including federal aid and l	ocal
roads	470,000
Total miles all classes surfa	aced
in 1924	40,000
Total highway expenditures,	
1924	\$990,683,770
Total cost federal aid pro-	
jects to date	632,487,440
Federal aid share of these	
projects	276,305,407



Where roads are like this the automotive merchant does not thrive. Fortunately roads of this type are rapidly being replaced by modern hard-surfaced highways.

way improvement. In many states the present highways are taxed to carry the traffic and the incentive for increased automobile ownership will come from the construction of more highways.

At the same time the highway building program will raise standards of living,

inspire new desires and create the wealth that will make these desires possible of attainment. The people are taking care of the situation. They are seeing to it that highways are built and when the roads are ready the automobiles will be upon them.

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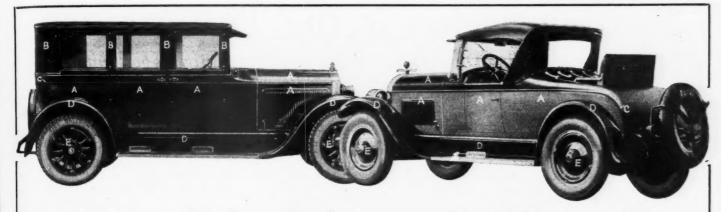
120,933 MILES OF IMPROVED (FEDERAL AID) HIGHWAYS

THE total mileage of improved highway in the United States and Hawaii completed and under construction Jan. 1, 1925, according to Federal Aid standards, was 120,933 miles. This included 32,988 miles of graded and drained and sand and clay type and the remainder was hard surfaced of one of the following types: Gravel, waterbound macadam, bituminous macadam, bituminous concrete, concrete, brick and miscellaneous.

Mileage by states was as follows:

	Total Road	Total Mileage	Miles Improved	State—	Total Road Mileage	Total Mileage Improved	Miles Improved 1924
State-	Mileage	Improved	1924		22,000	918.21	285.93
Alabama	56,551	1,695.55	368.38	Nevada		148.79	39.4
Arizona	21,400	1,507.98	221.58	New Hampshire		1,190.3	97.08
Arkansas	71,960	3,988	1,116	New Jersey		2,416	461.8
California	70,000	3,129.8	496.9	New Mexico		9,783.86	348.45
Colorado		1,412.06	184	New York North Carolina		3,890.9	322
Connecticut		828.39	61.94	North Dakota		2,335.06	432.85
Delaware		418	19.19	011	04 40 7	1,290.60	230.96
Florida		1.162.46	368.02	Oklahoma		1,394	320
Georgia		2,436,10	190.4			3,386	367
Idaho	40,200	1,513.01	76.7	Oregon Pennsylvania		3,943.8	399.12
Illinois	96,771	5,152.63	1,399.25	Rhode Island		405.7	38.8
Indiana		848.60	250.93	South Carolina		3,096.75	488.41
Iowa	109,113	4,654.8	910.1	South Dakota		3,986.9	1,207.4
Kansas	101 110	1,241	470	Tennessee		1,671.56	250.83
Kentucky	53,000	2,004.52	625.18	Texas		6,812,87	557.66
Louisiana		2,542.7	677.56	Utah		1,567.5	149.12
Maine	00 104	1,105.29	64.83	Vermont		950.27	54.10
Maryland		2,349	145.09	Virginia		2,832	187.44
Massachusetts		1,169.05	87.92	Washington	42,428	2,327	330
Michigan		3,891.8	474.6	West Virginia		1,383,33	371.17
Minnesota		6,888.3	850.0	Wisconsin		5,070.5	4.070
Mississippi		1,381.6	247.9	Wyoming		2,254,15	513.52
Missouri	111,510	4,187	1,268	Hawaii		27.5	10.5
Montana		903.58	130.8				
Nebraska	80,272	2,436.97	931.88	Total	2,866,061	120,933.84	22,207.69

Out of the total of 2,866,061 miles of highway in the United States, 174,350 miles have been approved for Federal aid permanent improvement.



A Dozen Color Schemes for Motor Cars

Body Panels & Hood (A)	Fenders (D)	Upper Panels Closed Car (B)	Chassis	Belt Line Moulding (C)	Striping	Wheels (E)
Gray	Black or Gray	Gray or Black	Black, White Red	Black, Red	White, Red	Red, Light Gray, Cream
Yellow	Black or Yellow	Yellow	Deeper or Lighter Body Shade	Blue, Fawn, Black, Drab	Black	Same Shade as Chassis
Light Green	Black or Light Green or Dark Green	Black or Dark Green	Same as Body or Dark Green	Dark or Light Green, Black	White, Gold, Yellow, Dark Blue	Dark Green, Yellow
Dark Green	Black or Lighter Green	Dark Green or Black	Yellow, Red and Black, or Light Green	Dark or Light Green, Red, Fawn, Drab	White, Red Yellow, Gold	Red and Black, Light Green
Light Blue	Black or Light Blue, Dark Blue	Black, Light Blue, Dark Blue	Light Blue, or Dark Blue	Light or Dark Blue, Brown, Drab, Fawn	White, Gold, Yellow, Dark Blue	Dark Blue, Cream, Fawn
Dark Blue	Black or Light Blue	Dark Blue or Black	Yellow and Black, Red and Black,	Fawn, Red, Drab, Light Blue	Red, White, Yellow, Gold	Red and Black, Vermilion
Bright Red	Black or Dark Red	Black, Bright Red, Dark Red	Bright Red, Dark Red	All Shades of Red	Yellow, White Dark Red	Dark Red
Dark Brown	Black, Yellow, Red	Black, Dark Brown, Light Brown	Yellow, Red Light Brown	Brown, Red, Fawn, Drab	Gold, Red, White, Yellow	Red, Cream
Dark Purple Lake	Black, Dark Purple Lake with Ver- milion Lines	Black or Dark Purple Lake	Vermilion with Black Lines	Blue, Fawn, Red, Drab	Vermilion, White	Vermilion and Black
White	Black, White	For Roadster only	Cream, with Blue, Red or Green Lines	Cream, Blue, Red, Green	Any color	Cream, Light Blue
Black	Black or Any Color	Black, Gray, Blue	Red, White, Yellow	Any Color	Any color	Dark Blue or any color
Claret	Black or Claret	Black, Claret or Fawn	Vermilion	Black, Red, Fawn	Dark Red, White, Ver- milion	Fawn, Red, Vermilion

To avoid making a car look stubby it is suggested the hood be painted the same as the body color. In most cases, also, the chassis probably will be painted black or some other dark color, but the lighter colors given above for the chassis make an excellent contrast with the body colors and often give to a car a much more nimble-footed appearance than a solid black.

Shifting Scenes in the Tire Market

Industry Is Settling Down to Sound Business Basis. Big Opportunity for Replacement Sales Provided

THE tire business has been undergoing revolutionary changes almost since the automobile industry started.

Today it is settling down to a sound business basis, providing a definite and huge annual market for tires for replacement and giving opportunity to the automotive merchant to make a continuous and consistent profit in a clean business.

Tires are just as necessary for automobiles as fuel and lubricant, and likewise they are consumed in survice. As a result is a certainty that every automobile in service will consume tires and will have to have tires replaced if it continues in service.

Early Conditions Unsatisfactory

One of the causes of revolutionary changes in the tire business was the effort to improve the wearing qualities of the product. Through a long period of development progress has been made toward a satisfactory combination of materials to bring about the desired end. This result is one of the stabilizing factors of the retail tire business today, for it enables us to determine rather accurately the quantity of tires that will be required for replacements, and therefore the average number that may be sold for each motor vehicle in operation.

In the early days of the industry when the manufacturing problem had not been solved tires were replaced at a high rate and it was hard to establish confidence in the quality of any tire. This made for unsettled and unsatisfactory conditions in the retail trade. Today the average number of tires used up per vehicle, while being reduced slightly, is fairly well established on a permanent basis and it is recognized that all standard makes of tires may be depended upon to give a full measure of service. That makes tire retailing a more satisfactory and more profitable business.

It is interesting to observe the progress in wearing quality of tires. The following table gives the average number of tires replaced per motor vehicle for the last six years:

1919-4 tires per motor vehicle.

1920-2.82

1921-2.05

1922-2.27

1923-2.17

1924—1.93

It will be seen that since 1921 the figures have been fairly constant in the neighborhood of two tires per vehicle. The figure for 1921 is somewhat lower than was justified by progress in manufacturing ,but the explanation lies in the diminished use of motor vehicles that accompanied the business depression of that year.

Balloon Tire Production Grows

The manufacturers, having solved the problem of durable construction, turned next to design and for something more than a year we have seen a decided trend toward the balloon tire. In 10 months of 1924, 4,428, 084 balloon casings were produced. This was only slightly less than 10 per cent of the total tire production. On Jan. 1, 1925, 61 per cent of all passenger car models in production were offering balloon tires as standard or optional equipment and since that time a number of changes to balloon equipment have been announced.

The growth of balloon tire production is shown by the figures for January and February of this year. In January out of a production of 3,008,000 casings, 563,146 were balloons and in February out of a production of 2,940,656 casings, 764,487 were balloons. In percentages the growth of balloon tire production is shown as follows:

Percentage of balloon tires to total prouction

1924	-average 10	per	cent
Jan.	192518	per	cent
Feb.	192510	per	cent

As to this year's tire business the United States Department of Commerce predicts an increase in production of 10 per cent over 1925, or a total of 55,000,000 casings. A resume of the rubber industry issued by P. L. Palmerton, chief of the rubber division of the department, states:

"In 1925 the tire industry should feel the effect of the large production and sale of automobiles in 1923, from which a substantial increase in the replacement tire demand should result. The 1925 production will be needed about as follows: For replacements, 41,000,000; for original equipment, 13,500,000; export, 1,250,000."

This prediction takes into account the large number of automobiles sold in 1923 as a basis for a substantial increase in the sale of tires for replacement this year. On the basis of this estimate the average number of tires replaced per motor vehicle this year would run slightly more than two.

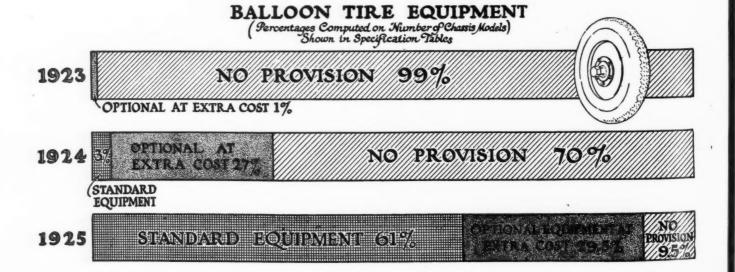
Tire sales promise to do their part to make this the great year of opportunity for the automotive merchant.

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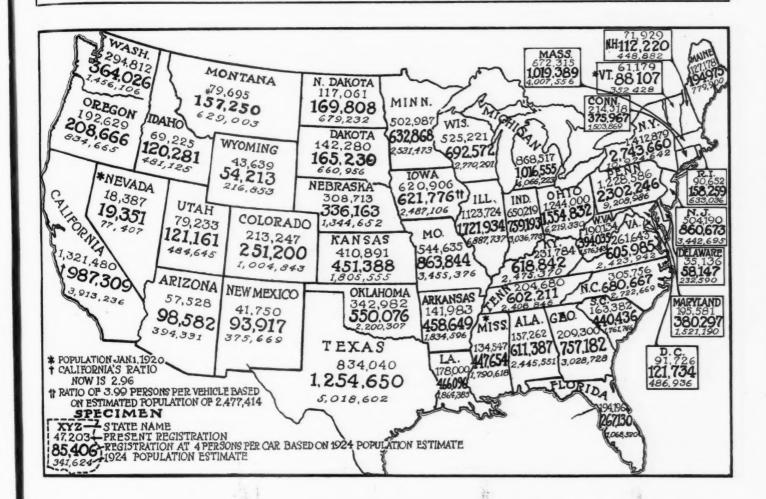
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Sell Like-Iowa



Room for Another 10,000,000 Motor Vehicles Today if All States Absorbed Them in the Same Proportion as Iowa

HIS is an "IF" map—showing registrations of the different states as of Jan. 1, 1925, and what the registrations would be—"if" all states sold as many cars in proportion to population as Iowa. Iowa's ratio of persons per motor vehicle at the beginning of the year was put at 3.99, being based on an estimated population of 2,447,414. The figures used throughout in this speculation are those of the United States Census Bureau's population estimate in 1924 and the ratio used is four persons per motor vehicle—approximately Iowa's present ratio.

Iowa Representative State

For purposes of comparison the same ratio—four persons per motor vehicle—is applied in the case of Iowa, although Iowa's rate of car selling has been slightly under that.

The same ratio—four persons per motor vehicle—is also applied in the case of California for consistency in comparison, notwithstanding that the ratio accredited to California as of Jan. 1, 1925, was 2.96 persons per motor vehicle, the only state with a lower ratio than Iowa's and the state with the lowest ratio in the union.

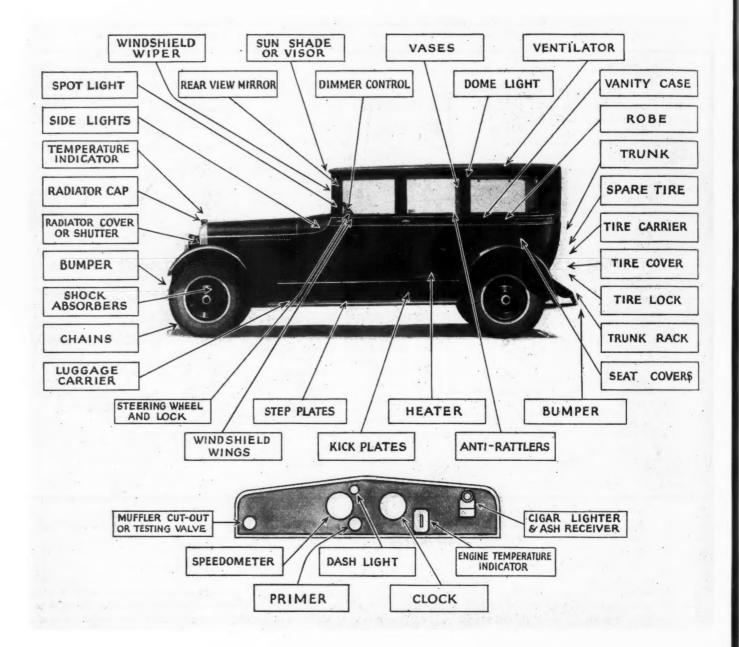
California's ratio of 2.96 could be used in this map as well as Iowa's, but in view of oft-heard objections to com-

paring California's showing in this respect with average states having no tourist and resort population from which to draw it was decided to make Iowa the basis. Iowa, in fact, is a representative state where conditions are similar to those obtaining in other representative states. It is not a tourist or resort state and lives largely upon its own resources. The motor vehicles sold in Iowa are sold almost entirely to permanent Iowa residents. In road improvements it is behind many states that do not show so low a ratio of persons per motor vehicle and with more extensive highway development it is reasonable to assume that Iowa's ratio will go still lower.

Would Mean Large Registration

It also is within the realm of reasonable expectation that, in time, the average ratio of persons per motor vehicle for all states will be down to the present Iowa level. Many years will elapse before the country realizes such an average. The purpose of the exhibit, herewith, as previously explained, is to show where the states would stand at present on the basis of 1924 census estimates, were each to sell motor vehicles in proportion to population as Iowa sells them now. On this basis the total registration would be 28,032,821.

Look 'Em Over and Sell 'Em Something



 E^{VERY} one of the 15,500,000 passenger cars in operation is a potential customer for accessories or extra equipment.

The car dealer, the garageman, the filling station operator, the accessory merchant—any retail automotive dealer-merchant—may vastly increase his sales if he will consistently look for the opportunity to sell more accessories and equipment.

The way to do it is to look 'em over and then sell 'em something.

The car itself will tell you what it needs. The merchant should familiarize himself with the chart on this page and soon he will be able to tell at a glance what a particular car is lacking in the way of equipment.

By using this chart it will be possible to quickly make a systematic check of the things needed to make the car's equipment complete, and then the job of selling will be greatly simplified.

This is a wonderful field of profit for the automotive merchant to cultivate. This chart is a ready-made cultivator. All it needs is an operator.

SOME ACCESSORIES TO SELL

For Well Known Cars

THE items on these pages do not constitute a complete list of all the accessories on the market.

Space does not permit giving so complete a list.

The makes of cars mentioned on this and following pages constitute approximately 90 per cent of the entire passenger car production of the United States.

The models illustrated or named are among the best selling.

The accessories listed under each model are articles that are NOT supplied as standard equipment by the manufacturer and must be purchased extra by the customer if he has them on his car.

There are many other desirable articles of equipment that are not supplied with these cars and which the dealer has an opportunity to sell.

The purpose of this compilation is not merely to list certain accessories that can be sold, but to prove the existence of an enormous market in every trade center of this country for automotive accessories.

It is a selling opportunity that far too many merchants are neglecting.

Chrysler Roadster

Ash Receiver
Cigar Lighter
Chains
Clock
Heater
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Primer
Radiator Cover or Shutter
Radiator Cap

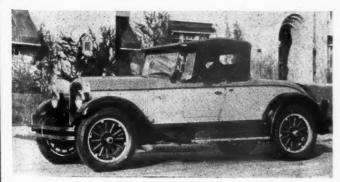
Rear View Mirror
Robe
Seat Covers
Spot Light
Spare Tire Carrier
Spare Tire Lock
Step Plates
Sun Shade or Visor
Tire Cover
Trunk
Trunk Rack

Chrysler Sedan

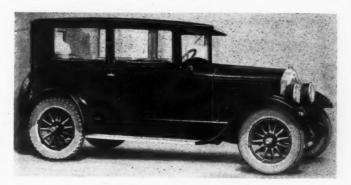
Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
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Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Primer
Radiator Cover or Shutter
Radiator Cap
Rear View Mirror
Robe

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Seat Covers
Side Light
Spot Light
Spare Tire
Spare Tire Carrier
Spare Tire Lock
Step Plates
Sun Shade or Visor
Tire Cover
Trunk
Trunk Rack
Vanity Case
Vases
Ventilator



Chrysler Roadstei



Buick Standard Six Coach

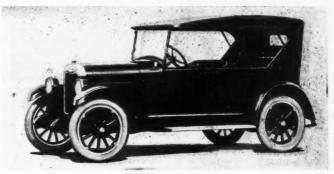
Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
Clock
Dimmer Control
Engine Temperature Indicator
Heater
Luggage Carriers
Muffler Cutout or Testing
Valve
Radiator Cover or Shutter
Radiator Cap
Robe

Seat Covers
Spot Light
Spare Tire
Spare Tire Lock
Steering Wheel and Lock
Shock Absorbers
Step Plates
Tire Cover
Trunk
Trunk
Trunk Rack
Vanity Case
Vases
Ventilator
Windshield Wings

Buick Standard Six Touring

Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
Clock
Dash Light
Dimmer Control
Engine Temperature Indicator
Heater
Luggage Carriers
Muffler Cutout or Testing
Valve
Radiator Cover or Shutter

Radiator Cap
Robe
Seat Covers
Spot Light
Spare Tire
Spare Tire Lock
Steering Wheel and Lock
Shock Absorbers
Step Plates.
Sun Shade or Visor
Tire Cover
Trunk
Trunk
Trunk Rack
Windshield Wings



Chevrolet Touring

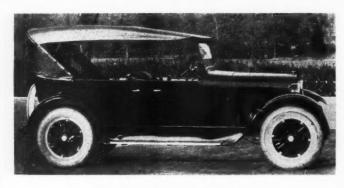
Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
Clock
Engine Temperature Indicator
Heater
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Primer
Radiator Cover or Shutter
Radiator Cap
Rear View Mirror

Robe
Seat Covers
Spot Light
Spare Tire
Spare Tire Lock
Steering Wheel and Lock
Shock Absorbers
Step Plates
Sun Shade or Visor
Tire Cover
Trunk
Trunk Rack
Windshield Wiper
Windshield Wings

Chevrolet Coach

Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
Clock
Dash Light
Engine Temperature Indicator
Heater
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Primer
Radiator Cover or Shutter
Radiator Cap

Rear View Mirror
Robe
Seat Covers
Spot Light
Spare Tire
Spare Tire Lock
Steering Wheel and Lock
Shock Absorbers
Step Plates
Tire Cover
Trunk
Trunk Rack
Vanity Case
Vases
Windshield Wings



Dodge Brothers Touring

Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
Clock
Dimmer Control
Engine Temperature Indicator
Heater
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Primer
Radiator Cover or Shutter
Radiator Cap
Rear View Mirror

Robe
Seat Covers
Side Light
Spot Light
Spare Tire
Spare Tire Lock
Steering Wheel and Lock
Shock Absorbers
Step Plates
Sun Shade or Visor
Tire Cover
Trunk
Trunk
Rack
Windshield Wings



Ford Fordor Sedan

Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
Clock
Engine Temperature Indicator
Heater
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Radiator Cover or Shutter
Radiator Cap
Robe
Seat Covers

Side Lights
Spot Light
Spare Tire
Spare Tire Lock
Steering Wheel and Lock
Shock Absorbers
Step Plates
Speedometer
Tire Cover
Trunk
Trunk
Trunk Rack
Vanity Case
Vases
Windshield Wings

Ford Touring

Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
Clock
Dash Light
Dimmer Control
Engine Temperature Indicator
Heater
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Primer
Radiator Cover or Shutter
Radiator Cap
Rear View Mirror
Robe

Seat Covers
Side Lights
Spot Light
Spare Tire Carrier
Spare Tire
Spare Tire Lock
Steering Wheel and Lock
Shock Absorbers
Step Plates
Sun Shade or Visor
Speedometer
Tire Cover
Trunk
Trunk
Rack
Windshield Wiper
Windshield Wings

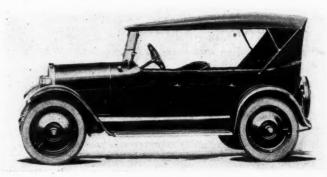
SOME ACCESSORIES TO SELL

Articles Not Supplied as Standard Equipment

Dodge Brothers Business Sedan

Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
Clock
Dimmer Control
Dome Light
Engine Temperature Indicator
Heater
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Primer
Radiator Cover or Shutter
Radiator Cap
Rear View Mirror
Robe

Seat Covers
Side Light
Spot Light
Spare Tire
Spare Tire Lock
Steerling Wheel and Lock
Shock Absorbers
Step Plates
Sun Shade or Visor
Tire Cover
Trunk
Trunk
Trunk Rack
Vanity Case
Vases
Ventilator
Windshield Wings



Durant Touring

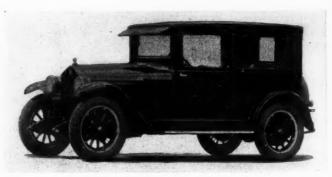
Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
Clock
Engine Temperature Indicator
Heater
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Radiator Cover or Shutter
Radiator Cap

Robe
Seat Covers
Spot Light
Spare Tire
Spare Tire Lock
Shock Absorbers
Step Plates
Sun Shade or Visor
Tire Cover
Trunk
Trunk Rack
Windshield Wings

Essex Coach

Ash Receiver
Bumpers (front and rear)
Clgar Lighter
Chains
Clock
Dome Light
Heater
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Radiator Cover or Shutter
Radiator Cap
Rear View Mirror
Robe

Seat Coves
Side Lights
Spot Light
Spare Tire
Spare Tire Lock
Shock Absorbers
Step Plates
Tire Cover
Trunk
Trunk
Rack
Vanity Case
Vases
Windshield Wiper
Windshield Wings



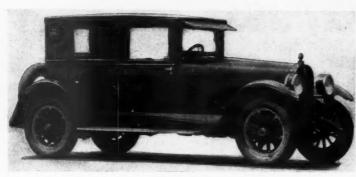
ssex Coach

Hudson Coach

Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
Clock
Dome Light
Heater
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Radiator Cap
Rear View Mirror
Robe
Seat Covers
Spot Light
Spare Tire
Spare Tire Lock
Shock Absorbers
Step Plates
Tire Cover
Trunk
Vanity Case
Vases
Windshield Wiper

Vases Windshield Wiper Windshield Wings

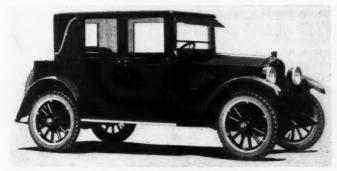
Accessories Not Supplied as Standard Equipment Give Dealer Wonderful Sales Opportunity



Hudson Coach

Hupmobile 4 Touring

Hupmobile 4 Touring
Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
Clock
Engine Temperature Indicator
Heater
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Primer
Radiator Cover or Shutter
Radiator Cap
Rear View Mirror
Robe
Seat Covers
Spot Light
Spare Tire
Cover
Trunk
Trunk
Trunk Rack
Windshield Wings



Hupmobile 4 Club Sedan

Ash Receiver Bumpers (front and rear) Cigar Lighter Chains Dimmer Control
Engine Temperature Indicator Heater Kick Plates Luggage Carriers
Muffler Cutout or Testing
Valve Primer

Radiator Cover or Shutter Radiator Cap Robe Seat Covers Spot Light Spare Tire Spare Tire Lock Steering Wheel and Lock Step Plates Tire Cover Trunk Rack Vanity Case Vases Ventilator Windshield Wings

Jewett Brougham

Ash Receiver
Bumpers (front and rear)
Clgar Lighter
Chains
Clock
Dimmer Control
Engine Temperature Indicator
Heater Heater
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve Primer Radiator Cover or Shutter Radiator Cap

Rear View Mirror
Robe
Seat Covers
Side Lights
Spot Light
Spare Tire
Spare Tire Lock
Steering Wheel and Lock
Shock Absorbers
Step Plates
Tire Cover
Vanity Case
Vases
Ventilator
Windshield Wings

Maxwell Touring

Ash Receiver Bumpers (front and rear) Cigar Lighter Chains Clock Dome Light Luggage Carriers
Muffler Cutout or Testing
Valve Heater Primer Radiator Cover or Shutter

Radiator Cap Radiator Cap
Robe
Seat Covers
Spot Light
Spare Tire
Spare Tire Lock
Shock Absorbers
Step Plates
Sun Shade or Visor
Tire Cover
Trunk
Trunk Rack
Windshield Wings

Maxwell Club Sedan

Ash Receiver
Bumpers (front and rear)
Clgar Lighter
Chains
Clock
Dome Light
Luggage Carriers
Muffler Cutout or Testing
Valve Valve Primer Radiator Cover or Shutter Radiator Cap

Seat Covers
Spot Light
Spare Tire
Spare Tire Lock
Shock Absorbers
Step Plates
Tire Cover
Trunk
Trunk
Trunk Rack
Vanity Case
Vases Vases Ventilator Windshield Wings



Maxwell Touring Car

SOME ACCESSORIES TO SELL

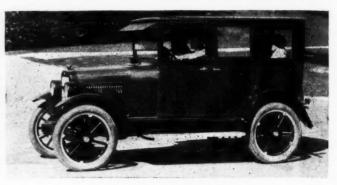
For Well Known Makes of Cars



Nash Special Six Two Door Sedan

Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
Clock
Engine Temperature Indicator
Heater
Muffler Cutout or Testing
Valve
Primer
Radiator Cover or Shutter
Robe

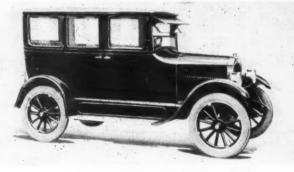
Seat Covers
Spot Light
Spare Tire
Spare Tire Lock
Spare Tire Lock
Steering Wheel and Lock
Shock Absorbers
Step Plates
Temperature Indicator
Tire Cover
Trunk
Vanity Case
Vases
Ventilator
Windshield Wings



Overland All-Steel Sedan

Anti-Rattlers
Ash Receiver
Bumpers (front and rear)
Clgar Lighter
Chains
Clock
Engine Temperature Indicator
Heater
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Radiator Cover or Shutter
Radiator Cap
Rear View Mirror

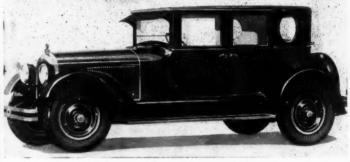
Robe
Seat Covers
Side Lights
Spare Tire
Spare Tire Lock
Steering Wheel and Lock
Shock Absorbers
Step Plates
Tire Cover
Trunk
Trunk Rack
Vanity Case
Vases
Windshield Wings



Star Standard Sedan

Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
Clock
Dimmer Control
Engine Temperature Indicator
Heater
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Radiator Cover or Shutter
Radiator Cap

Rear View Mirror Robe
Seat Covers
Side Lights
Spot Light
Spare Tire
Spare Tire Lock
Steering Wheel and Lock
Shock Absorbers
Step Plates
Tire Cover
Trunk
Trunk Rack
Vanity Case
Vases
Windshield Wings



Paige Four Door Brougham

Ash Receiver
Bumpers (front and rear)
Chains
Dimmer Control
Engine Temperature Indicator
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Primer
Radiator Cover or Shutter
Radiator Cap
Rear View Mirror

or Brougham

Robe
Seat Covers
Side Light
Spot Light
Spore Tire Carrier
Spare Tire Lock
Steering Wheel and Lock
Step Plates
Tire Cover
Vases
Windshield Wiper
Windshield Wings

Studebaker Standard Six Coach

Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
Dome Light
Engine Temperature Indicator
Heater
Kick Plates
Luggage Carriers
Muffler Cutout or Testing
Valve
Primer
Radiator Cover or Shutter

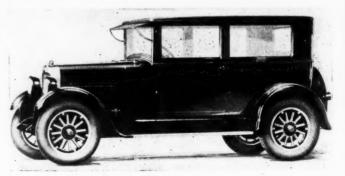
Robe
Seat Covers
Spot Light
Spare Tire
Shock Absorbers
Step Plates
Tire Cover
Trunk
Trunk Rack
Vanity Case
Vases
Windshield Wings



Studebaker Standard Six Duplex Phaeton

Ash Receiver
Bumpers (front and rear)
Cigar Lighter
Chains
Engine Temperature Indicator
Heater
Luggage Carriers
Muffler Cutout or Testing
Valve
Primer

Radiator Cover or Shutter
Robe
Seat Covers
Spot Light
Spare Tire
Shock Absorbers
Step Plates
Tire Cover
Trunk Trunk Rack
Windshield Wings



Dollars at Your Door

\$178.00 Automotive Merchandise and Supplies Sold Per Motor Vehicle in 1924

By SAM SHELTON

\$177.57 Per Motor Vehicle

equipment and supplies for the average motor

Service supplies and parts... 36.00

The item for lubricating oils does not include

greases. Labor is not included in the item for serv-

Following is the approximate amount spent for

\$37.00

14 46

15.14

HE huge figures that portray the vastness of the automotive industry today mean a great deal to the individual automotive merchant, but it is not until those figures are analyzed and applied to his own business that they are of greatest value to him.

When applied to his own business they provide a check by which he may measure his progress and determine to an approximate degree the volume of business he should get if

vehicle in 1924:

Tires

ice supplies and parts.

Gasoline ...

Lubricating oil

Accessories

he obtains only that which the law of averages would allot to him.

Thus if the average number of tires replaced per motor vehicle each year is 1.91, the merchant who has 100 good car customers who buy their supplies from him regularly may reasonably expect to sell 191 tires and if the average retail price is \$19 he may expect a volume of business from that source of \$3,629.

How Rusiness Is Divided

As a matter of fact, it can be shown by a careful analysis of statistics that the average motor vehicle in 1924. which was not by any means a boom year, used through

retail purchase approximately \$178 worth of automotive merchandise. This does not take into account the amount expended for labor for repairs and maintenance.

Thus on the basis of 1924, the automotive merchant supplying the constant requirement of 100 cars has an estimated market for automotive merchandise amounting to \$17,800.

But if all the vehicles in operation in 1924 were divided equally among the existing retail trade units there would be 180 vehicles per unit and the retail sales of each equipment and supplies would be about \$32,040. Of course, many of 98,170 retail trade units listed by the Chilton Trade list are smaller than the average and others do many times the volume of business arrived at as an average.

One of the accompanying tables shows how this business is

The important thing is that the merchant, no matter how small, should survey his field, determine as accurately as possible the maximum number of car customers he can get, and then determine to make the net profit that should be his for the

corresponding volume of business. That is the way small merchants grow to be big ones.

So far we have been speaking of automotive merchandise other than motor vehicles. The vehicle field presents a corresponding opportunity for the dealer in that business.

Total Average Volume of \$71,499

The total number of passerger car dealers on the Chilton

Class Journal list in March, 1925, was 48,151. Of these, 12.024 were Ford dealers. It is estimated by James H. Collins of the Chilton Class Journal Co. that new passenger car sales in 1925 will aggregate \$1,900,000. This business divided equally among the 48,000 new car dealers

of trade would yield a total average volume of \$71,499.

Many automotive merchants are adding to their business and their profits by selling

would give each a volume of \$39,459. Assuming that these dealers would share the equipment and supply business equally with other retail trade units, the two sources

radio equipment because it has been found that this class of merchandise fits in well with an automotive stock and appeals to the same type of customers. Radio also is subject to a certain seasonal fluctuation in volume, the high point coming at the time when automotive sales are lowest. The resultant tendency to level out the seasonal volume is one of the advantages to the dealer in handling radio products. In most cases where radio has been combined with automotive products it has been done without detracting from the volume of the latter, and in no case should the automotive merchant who takes on radio permit his automotive business to suffer. The automotive industry is the greatest of all businesses in the United States and it holds forth unequaled opportunity for profit to the intelligent and capable merchant.

The automotive merchant should seek to increase his business along lines that yield profit. If he finds that he can add radio to his line on a profitable basis and without interfering with his automotive business it undoubtedly is a good move. But he should not neglect the opportunities to expand his automotive business.

Just now there is a tremendous opportunity to expand in the

RETAIL SALES OF AUTOMOTIVE PRODUCTS

	1920	1921	1922	1923	1924
Cars	\$2,412,100,000	\$1,555,250,000	\$2,139,400,000	\$2,357,200,000	\$2,121,500,000
Trucks	565,200,000	222,100,000	296,500,000	414,700,000	392,500,000
Service supplies and parts	375,500,000	415,400,000	555,250,000	601,100,000	639,300,000
Accessories	145,250,000	146,750,000	170,500,000	210,400,000	235,100,000
Tires (replacement)	539,800,000	510,100,000	557,100,000	593,500,000	667,500,000
	\$4,037,850,000	\$2,849,600,000	\$3,718,750,000	\$4,176,900,000	\$4,053,900,000

Table Showing, by States and Classification, the Number of Retail Automotive Merchants

Number of Each Class in Each State in the Chilton Trade List, March, 1925. (See Foot Note.)

Car		Ford	Truck Dealers		Shops	Retail Supply Stores	Trade
1	2	3	4	5	6	7	8
Alabama 293	171	119	9	383	496	518	703
Arizona 200	110	52	8	229	280	299	385
Arkansas 360	226	143	8	466	502	529	713
California2,206				3,192	4.314	3.150	5.786
Colorado 553				708	829	831	1.087
Connecticut 627				781	800	595	1,390
Delaware 88				147	111	146	234
D. of C 89			-	87	111	95	237
				584	755	739	
Florida 503				552	865	700	1,003
Georgia 456							
Idaho 248	156			266	329	304	407
Illinois3,149				3,792	4,368	3,946	6,251
Indiana1,602	717				2,607	2,344	3,632
Iowa2,014				2,432	3,028	2,765	3,584
Kansas1,165					1,416	1,561	2,562
Kentucky 685	340			627	723	717	1,102
Louisiana 359					529	506	659
Maine 466					749	485	948
Maryland 441	176 427			475 1.560	590 2,153	535 1.303	906
Massachusetts1,178	896			2,408	2,133	2.372	$\frac{3,103}{3,798}$
Michigan					2,390	2,224	2,859
Mississippi 969	145			295	297	340	505
Mississippi	715			2,010	2,046	1.947	3.030
Montana					416	422	586
Nebraska1,075					1,431	1.367	1,727
Nevada99				105	128	120	158
New Hampshire 279	102			414	382	315	616
New Jersey 1.178	447				1.885	1,723	2,967
New Mexico 147 New York 3,629	93	55		205	213	204	310
New York3.629	1.665	623	216	5.838	5.474	5.170	8.800
North Carolina 725	313	183	29	581	994	834	1,266
North Dakota	355	206	33	518	655	664	876
Ohio2,918	1,236			3,542	4,019	3,757	5,852
Oklahoma 743	454			889	1,159	1,124	1,490
Oregon	242			704	911	742	1,113
Pennsylvania3,857	1,632			4,826	4,954	4,945	7,419
Rhode Island 214	63			244	345	215	508
South Carolina 301	141			250	437	374	555
South Dakota 628	375			691	806	795	1,010
Tennessee 440				380	625	548	834
Texas1,781	955				2,468	2,707	4,576
Utah 178				$\frac{202}{321}$		241 323	341
Vermont 249 Virginia 660					319 769	746	1 151
Virginia 660 Washington 736					1.250	1.107	1,151
West Virginia 659	294			612	640	683	1,005
West Virginia	1.187				2,362	1.468	3.334
Wyoming 179	82			153	198	180	233
Wyoming	1,309					2,378	
	2,000	.20			-,100	-,010	5,400

...48,151 24,157 12,024 2,125 60,609 68,159 62,103 98,170

-For total number of separate retail business establishments see column 8. There is considerable duplication in the various columns. Example: car dealer operating garage, service station and supply department would be counted under each such heading. Column 8 shows net figures with all duplications eliminated.

*Passenger cars and trucks, including Fords.

sale of automotive accessories, equipment and supplies. In another section of this issue we have undertaken to show some of the possibilities in adding to the sale of accessories. have not shown the full possibilities. The list of accessories that can be sold is not complete because the limitations of space would not permit. Nor have we shown the market for service equipment and supplies that should go with every motor vehicle and which constitutes a remarkably fertile field for intensive merchandising cultivation. The great majority of motor vehicles in service are not as well equipped as they should be with wrenches, jacks, pumps, tire repair materials and vulcanizers, extra spark plugs, extra fan belt, tire gage, valve caps and insides, dust caps, cotter pins, nuts and bolts, tow line and many other items. In the sale of these items as well as accessories for installation there is a great undelevoped market.

What are the possibilities of increasing accessory sales? Take spotlights as an example. Approximately only 15,500 cars were equipped with spotlights at the factory in 1924 out of a total production of 3,243,285 passenger cars. That is less than onehalf of 1 per cent, or about as strong as the stuff Uncle Sam permits to be made in the once flourishing breweries. What about all the rest of the passenger cars? Certainly any intelli-

gent merchant or salesmen can produce many sound reasons why there should be a spotlight on every car, just as there should be other accessories which are in fact practically necessities.

The retail market for spotlights, therefore, in 1924 was almost equal to the number of new cars sold in your own community, not to mention the older cars not yet equipped.

Opportunity for Accessory Sales

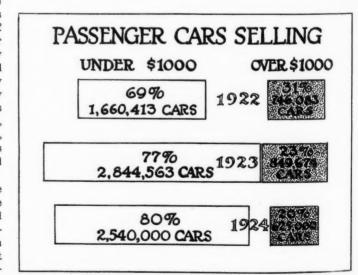
Windshield cleaners were more generally supplied as factory equipment, but still about 58 per cent of all passenger cars left the factories without any kind of windshield cleaner attached. And a very large proportion of those cleaners supplied as standard equipment were hand operated affairs that soon wore out. The retail market for windshield cleaners is really more than 58 per cent of the passenger car output.

Consider chains. These are never supplied as standard equipment. And yet no car should be without them. The commercial survey department of the Chilton Class Journal Co. believes that about 70 per cent of the new vehicles will be equipped with chains. In other words, someone will sell chains to at least seven out of 10 of the new cars sold in your community this year, and first class salesmanship ought to be able to land the other three. In addition it is estimated that approximately one-fourth of the cars previously equipped with chains will need new chains every year. That requirement provides a market in excess of that furnished by new cars.

Take shock absorbers. Figures compiled by the commercial survey department of the Chilton Class Journal Co. show that nine out of 10 new cars leave the factory without any kind of shock absorbing or spring check device attached. And yet every driver would like to have the comfort and safety that these devices provide. The potential market is nine out of 10 new cars in every community and an even larger proportion of the old cars.

This does not by any means exhaust the sales possibilities in the accessory field. There are dozens of other useful and desirable articles that can be easily sold to a great many motorists. We believe it safe to say that the undeveloped field in the accessory field exceeds that which already has been developed. In other words it is entirely possible by energetic sales methods for the automotive merchants of this country to double the volume of their sales of accessories.

The automotive industry is bringing thousands of dollars to the doors of dealers, service stations and garages. The number of these dollars that each one of these trade units is able to collect and keep depends upon the individual enterprise and initiative of the merchant. We have shown that there are plenty of dollars to go around and a lot more than can be brought in with a little effort. It is every merchant's own problem. And a little thought and effort directed to it pays well in increased profits.



\$100 a Car From Gasoline and Oil

Sales Possibilities of Automotive Fuels and Lubricants

Amount Consumed for Last Five Years (Gallons)

1920	1921	1922	1923	1924
Gasoline 4,031,459,730	4,296,851,921	5,105,246,783	6,352,463,102	7,372,508,166
Lubricating oils., 198,169,334	211,401,344		246,645,952	272,146,006
Approximate consumption of gas	oline per motor vehic	le in 1924		420 gallons
Approximate consumption of lub	ricating oils per mote	or vehicle, 1924		15.3 gallons
Average retail value of gasoline	consumed in 1924, p	er gallon		18.85 cents
Average retail value of lubricating	ng oil consumed in 19	24, per gallon		94.52 cents
Retail value of gasoline consume	l per car in 1924	***************************************		\$74.97
Retail value of lubricating oils co	nsumed per car in 192	4	*************	14.46
-				
Total retail value, gasoline as	nd oils	• • • • • • • • • • • • • • • • • • • •	************************	\$89.43

(Greases not included in above computations.)

By KEITH J. FANSHIER

POR every motor vehicle operating in the territory of the motor car dealer and the garageman a potential motor fuel and lubricating oil business of practically \$100 a year is going to someone.

Compilation and analysis of figures on gasoline consumption, motor vehicle registration, and prices of gasoline and oils in the past indicates that the figure of \$100 is a conservative one to be used in estimating the gross business possible from supplying fuel and lubricants to passenger cars and motor trucks on an average all over the United States.

This analysis probably will be of value to the dealer and the garageman in computing his possible gasoline and lubricating oil business. It is not to be expected, of course, that \$100 will be expended for gas and oil on every motor vehicle in operation in 1925. But, based on the best figures obtainable in the past, that seems a fair average, in round figures, for expectation of business in the immediate future.

A Fair Figure

On this basis if a dealer could figure that he could depend upon the exclusive gasoline and oil business of ten cars, he would be reasonably within his rights to expect total gross business from that source of around \$1,000 in 1925. The total might be somewhat more, or might be considerably less, depending entirely upon the territory in the particular case in question, the makes of the cars, the purposes to which they are to be used, the weather, the grades of gasoline and oils sold, the changing retail prices and other variables, but that figure would be something in the nature of a fair index to possibilities.

If the concern could figure on the business from 25 cars a gross of \$2,500 might be set as a figure. Fifty cars should show a total of something like \$5,000. One hundred cars would swell it into probably a \$10,000 business.

For the year 1924 it is believed that the

average motor car (including both passenger cars and trucks) consumed gasoline and oils valued at retail prices at close to \$90. However, the total of such business for 1925 might safely be placed at a somewhat higher figure. One reason for this is that no charges for greases of any kind are included in the 1924 computation. Another is that, thus far in 1925, gasoline prices have been higher than in 1924-so much higher that their record in the first four months must have an appreciable effect in bringing up the total gross business over the period of the year. For practically the entire year thus far gasoline prices at retail have been higher than the high level maintained for but a comparatively short time in 1924. This indicates a gross revenue from gasoline sales substantially in excess of that last year, unless drastic reductions should pull prices down to a level below last year's low average and keep them there.

The total gasoline consumption by motor vehicles for 1924 is computed by the American Petroleum Institute to have been 7,372,508,166 gallons. This is an increase of more than one billion gallons over 1923, nearly two billion gallons over 1922 and more than three billion gallons over 1921. It is nearly 100 per cent more than the consumption of 1920.

Consumption of lubricating oils has increased, but not so rapidly. Consumption of lubricants by motor vehicles in 1924 is set at 272,146,006 gallons, a gradual increase being shown over the five-year period amounting to an increase of about 33 1/3 per cent, or an average annual increase of only about 6½ per cent

The number of motor vehicles registered in 1924 was 17,731,486. Simple division of total motor vehicle consumption by total registration reveals an approximate average of a consumption of 420 gallons throughout the year per car. In some quarters this figure will be regarded as high. A good many oil companies two years ago figured 300 gallons per passenger car per year as a fair

approximation, but those figures had to be revised upward. Also, when it is considered that the individual truck consumption of gasoline is very much higher than passenger car consumption, the figure of 420 gallons per year does not appear far wrong. On the same basis of computation, the figure of 15.3 gallons of lubricating oil per car per year is reached. This figure will be assailed both as too high and too low, but it happens to be a very close approximation of the findings of a commission of large oil company representatives which spent several months on this very question last year.

Figure of Value to Dealers

In 1924 the high average price for retail gasoline in 50 representative points in the United States was 20.99 cents. The low was 15.27 cents. The average price, considering time in force, etc., is figured at 17.85 cents. It is simple then to arrive at the total amount of money spent for gasoline and for lubricating oil for each motor vehicle. In the case of gasoline the total for 1924 was \$74.97. For motor oil it was \$15.27, on a basis of an average of 94.52 cents per gallon for the latter, giving a total of \$89.43.

It must be remembered that this does not include greases.

These figures undoubtedly will prove useful to the dealers in trying to compute and forecast business possibilities. They offer an opportunity for a definite hookup in considering potentialities, and should be a great improvement over blind guess-work.

Unless conditions governing the fueling and lubricating business of the dealer differ from those in most cases, he will not be able to count on all the business of a very considerable number of cars. Yet, by determining the total number of cars used in his territory, he should be able to decide what share of all the business for these cars he should count on. This will average up very much the same as if he were figuring on the exclusive business of a certain number of cars.

What There Is to Sell This Year IN PASSENGER CARS

Name and Address of Manufacturer and

NAME OF	M	ANUFACTURER		Number of	PRICE	RANGE
CAR	Name	Address	Models	Cylinders and Type	Lowest	Highes
American	Bessemer American Motor Co	Plainfield, New Jersey	D66	6-V	\$1695	\$2550
Anderson	Anderson Motor Co	Rockhill, South Carolina	····· {41 50	6-V 6-V	1195 1595	1895 1945
Apperson	Apperson Bros. Automobile Co	Kokomo, Indiana	{"6" V-8 St. 8	6-V 8-Ve _e 8-V	1650 2485 2550	2395 3850 2850
Auburn	Auburn Automobile Co	Auburn, Indiana	6-43 8-63 8-88	4-V 6-V 8-V 8-V	795 1395 1895 1975	795 1945 2550 2350
Buick	Bulck Motor Co	Hamilton Ave.,Filnt, Michigan	(Std. (Mast. 120 (Mast. 128	6-V 6-V 6-V	1150 1365 1625	1665 2225 2925
Cadillac	Cadillac Motor Car Co	2860 Clark Avenue	V-63 Cu-tom-132 Custom-138	8-Vee 8-Vee 8-Vee	3185 3975 4350	4010 3975 4950
Case	J. I. Case T. M. Co	Racine, Wisconsin	["Y" "X" J. I. C.	6-V 6-V 6-V	2225 1570 1840	2975 2385 2590
Chandler	Chandler Motor Car Co	St. Claire Ave. and E. 131st St		6-V	1595	3095
Chevrolet	Chevrolet Motor Co	General Motors Bidg Detroit, Michigan	Sup. "K"	4-V	525	825
Chrysler	Chrysler Motor Corp	East Jefferson Avenue Detroit, Michigan	Six-112 Six-118	6-V 6-V	1395 3725	2195 3725
Cleveland	Cleveland Automobile Co	London Rd. and Euclid Avenue	·····\ ("31" ("43"	6-V 6-V	895 1095	1195 1725
Cole	Cole Motor Car Co	750 E. Washington StreetIndianapolis, Indiana	····· Master	8-Vee	2325	3325
Cunningham	James Cunningham Son & Co	13 Canal Street	v-6	8-Ve ₀	5800	7650
Dagmar	M. P. Moller Motor Car Co	Surrey and Summit Avenues	6-60 6-70	6-V 6-V	1785 3500	2345 4750
Davis	Geo. W. Davis Motor Car Co	1200 North E. Street	190	6-V 6-V	1395 1695	1995 2295
Dodge Brothers	Dodge Brothers, Inc	1678 Jas Campau Avenue Detroit, Michigan	"25"	4-V	855	1330
Dorris	Dorris Motor Car Co	Laclede Avenue and Sarah Street	6-80	6-V	4150	5800
Duesenberg	Duesenberg Automobile & Motors Co., Inc	West Washington and Harding Streets Indianapolis, Indiana	St. 8	8-V	6250	7800
DuPont	DuPont Motors, Inc	Moore, Pennsylvania	D	6-V	2600	3400
Durant	Durant Motor of N. J	Elizabeth, New Jersey	A-22	4-V	830	1190
Elcar	Elear Motor Co	Beardsley Ave Elkhart, Indiana	6-41 6-51 18-80	4-V 6-V 8-V	995 1220 2165	1695 1920 2865
Essex	Hudson Motor Car Co	. 12601 East Jefferson Avenue Detroit, Michigan	"6"	6-V	895	900
Flint	Flint Motor Co	Flint, Michigan	{40 85	6-V 6-V	1285 1595	1760 2735
Ford	Ford Motor Co	No. Woodward Avenue Detroit, Michigan	····· "L.,	4-V	260	660
Franklin	H. H. Franklin Mfg. Co	101 West Marcellus StreetSyracuse, New York	···· "11A"	6-V	2650	4400
Gardner	Gardner Motor Co., Inc	Main and Rutger Streets	Series 5	4-V 8-V	945 1995	1595 2495
Gray	Gray Motor Corporation	Mack and Terminal R. R		4-V	630	975
H. C. S	H. C. S. Motor Car Co	1402 North Capital Avenue	"6"	6-V	2650	3350
Haynes	Haynes Automobile Co	Kokomo, Indiana	"60"	6-V	1600	2300
lerts	Yellow Cab Mfg. Co	. 5801 West Dickens Avenue	"D-1"	6-V	1695	1695
łudson	Hudson Motor Car Co	12601 East Jefferson Avenue Detroit, Michigan	"Super 6"	6-V	1345	1895
Hupmobile	Hupp Motor Car Corporation	Detroit, Michigan	····· {"R"	4-V 8-V	1225 1975	1800 2375
Jewett	Paige Detroit Motor Car Co	Fort and McKinstry Streets Detroit, Michigan	"23-25"	6-V	1205	1780
Jordan	Jordan Motor Car Co	1054 East 152d Street	K-120 L-124 1/2 Series A	6-V 6-V 8-V	2385 2095 2575	2385 2095 3375

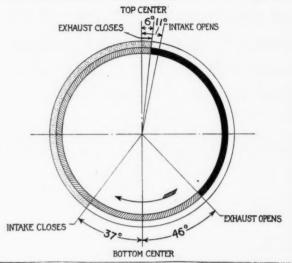
A condensed catalog of the 1925 automobiles, giving makes, models, names and addresses of manufacturers, cylinder types and range of prices. For detailed list of various body types see pages 76 and 77.

Price Range of 1925 Passenger Car Models

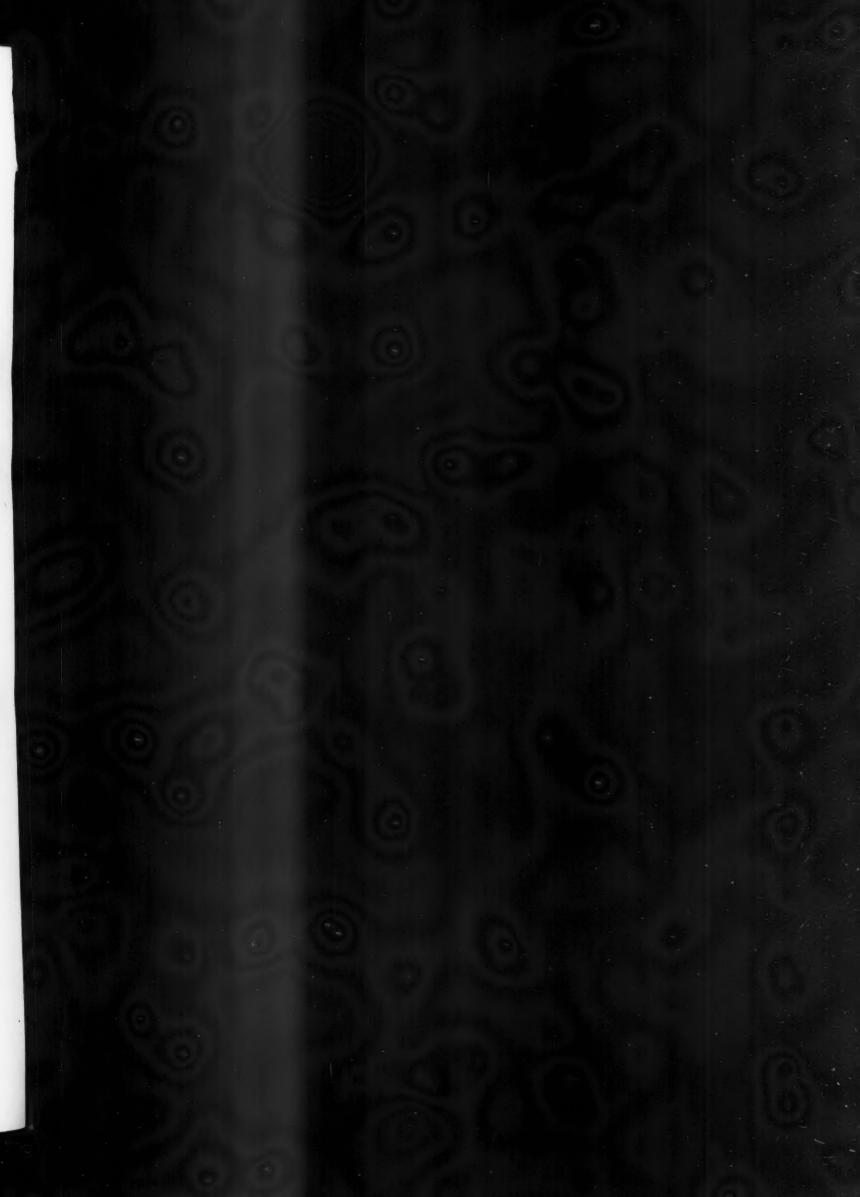
NAME OF		ANFACTURER		Number of Cylinders	PRICE	RANGE
GAR	Name	Address	Models	Type	Lowest	Highes
Kissel	Kissei Motor Car Co	400 Kissel Avenue		6-V 8-V	\$1685 2485	\$3385 3585
Lexington	Lexington Motor Co	Connersville, Indiana	Concord Minute Man	6-V 6-V	1595 2095	2445 2895
Lincoln	Lincoln Motor Car Co	Detroit, Michigan	*18" k	8-Vee	4000	5300
Locomobile	Locomobile of America, Inc	1 South Main Street Bridgeport, Connecticut		6-V	7460	10300
McFarlan	McFarian Motor Co	Mount and High Streets	SV'	6-V 6-V	2650 5400	4600 9000
Marmon	Nordyke & Marmon Co	Kentucky Avenue and Morris Street	"74"	6-V	3165	3975
faxwell	Maxwell Motor Co., Inc	East Jefferson Avenue and Belt Line Detroit, Michigan	"25"	4-V	885	1585
Mercer	Mercer Motor Car Co	Trenton, New Jersey	"6"	6-V	4500	6500
Moon	Moon Motor Car Co	400 North Main StreetSt. Louis, Missouri	Series A Newport Metropol. London	6-V 6-V 6-V 6-V	1195 1495 1515 1985	1685 1915 2095 2540
Nash	Nash Motors Co	Kenosha, Wisconsin	Adv. 121 Adv. 127 Special	6-V 6-V 6-V	1375 1525 1095	1485 2290 1545
Oakland	Oakland Motor Car Co	240 Oakland AvenuePontiae, Michigan	"6-54"	6-V	1095	1645
Oldsmobile	Olds Motor Works	Lansing Michigan	"30"	6-V	890	1375
Overland	Willys-Overland, Inc.	Toledo, Ohio	{91 93	4-V 6-V	495 985	715 1150
Packard	Packard Motor Car Co	East Grand Boulevard and Belt Line Detroit, Michigan	6-126 6-133 8-136 8-143	6-V 6-V 8-V 8-V	2585 2785 3750 3950	2785 2885 4850 5100
Paige	Paige-Detroit Motor Car Co	Ford and McKinstry Streets	21-24	6-V	2165	2965
Peerless	Peerless Motor Car Co	Quincy Avenue and South East 93rd Street	{6-70 Equ. 8	6-V 8-Vee	1895 2945	2925 4195
Pierce-Arrow	Pierce-Arrow Motor Car Co	1695 Elmowood Avenue	{33	6-V 6-V	5250 2895	7000 4045
Reo	Reo Motor Car Co	South Washington Ave.	т-6	6-V	1595	2235
Revere	Revere Motors Co	Logansport, Indiana	{25 M	6-V 4-V	2750 3200	3800 4000
Rickenbacker	Rickenbacker Motor Co	Detroit, Michigan	{D	6-V 8-V	1395 2195	1895 2795
Roamer	Roamer Motor Car Co	Kalamazoo, Michigan	6-54-E-118 6-54-E-138 4-75-E	6-V 6-V 4-V	2485 3950 3650	3285 4250 3650
Rollin	Rollin Motors Co	Cleveland, Ohio	"G"	4-V	1155	1455
Rolls Royce	Rolls Royce of America, Inc	Springfield, Mass	"40-50"	6-V	22	22
Stanley	Stanley Steam Vehicle Corp. of America	Newton, Massachusetts	"252"	2-Steam	2500	3300
Star	Durant Motor Co. of N. J	Elizabeth, New Jersey	"4"	4-V	540	820
Stearns Knight	F. B. Stearns Co	12435 Euclid Avenue	("B"	4-V 6-V 6-V	1595 1875 2395	2095 2480 3395
Sterling Knight	Sterling Knight Co	Warren, Ohio	В	6-V	2150	3200
Stevens-Duryes:	Stevens-Duryea, Inc	Chicopee Falls, Massachusetts		6-V	7500	10175
Studebaker	Studebaker Corp. of America, Inc	Bronson and Main Streets	Std. 6 Spec. 6 Big 6	6-V 6-V 6-V	1125 1450 1875	1650 2060 2650
Stutz	Stutz Motor Car Co. of America, Inc	10th Street and N. Capitol Avenue		6-V 6-V	2395 3035	3050 4035
Velie	Velie Motors Corp	109 Velie Place	"60"	6-V	1275	1925
Westcott	Westcott Motor Car Co	Warder and Spring Streets	44	6-V 6-V	1970 2325	2320 2325
Wills Ste. Claire	Wills Sainte Claire, Inc.	Maryville, Michigan	A-68-121 B-68-127 C-68-128 W-6	8-Vee 8-Vee 8-Vee 6-V	2475 2885 3185 2485	3375 5500 4285 3385
Willys-Knight	Willys-Overland, Inc.	Toledo, Ohto	65-"4" 67-"4" 66-"6"	4-V 4-V 6-V	1295 1425 1845	1575 2095 2495

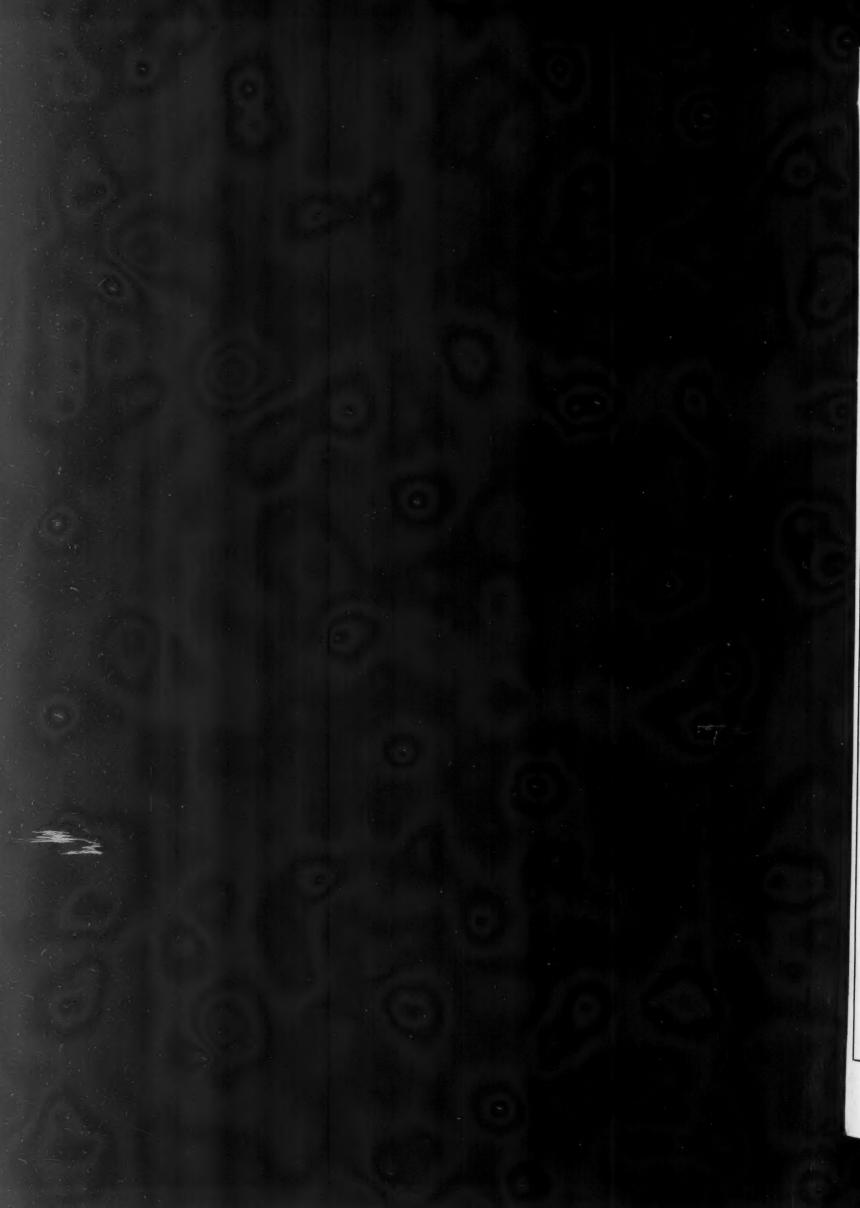
Valve Timing on 1925 Cars

THE diagram illustrated herewith represents what might be called an average valve timing diagram. The timing given in degrees and minutes is nothing more than stating the time at which the valves open and close in relation to the graduation of a circle. Thus when it is stated an inlet valve opens 10 deg. after top center, it means that when the valve is seated a point at exactly the top of the flywheel will move 10 deg. or 1-36 of a circle whereupon the inlet valve should begin to open. In the tables given below TC means top center, BC, bottom center, ATC, after top center, BTC before top center and BBC before bottom center.



			BOTTOM CENTER	
Name of Car	Inlet Opens	Inlet Closes	Exhaust Closes	Exhaust Opens
Apperson 6	. 06 ATC	42 ABC	04 ATC	45 BBC
Apperson 8		45 ABC	10 ATC	55 BBC
Buick		68-10' ABC	32-10' ATC	76-50' BBC
Cadillac		46-40' ABC	On T C	
Case Y		40 ABC	8 ATC	40 BBC
Chandler	a 70.000	52 ABC	16 ATC	53 ABC
Chevrolet	24 1770	52 ABC	16 ATC	40 BBC
Chrysler		40 ABC	2 ATC	48 BBC
Cleveland 43		52 ATC	16 ATC	53 BBC
Dodge Brothers			8 ATC	
		45 ABC		54 BBC
Ouesenberg	24 1500		6 ATC	
Ourant		52 ABC	16 ATC	40 DDC
Elcar CF	- AMO	35 ABC	5 ATC	42 BBC
Essex 6	A FFE C	50 ABC	8 ATC	55 BBC
Elint	0 100	35 ABC	5 ATC	48 BBC
Franklin		57 ABC	25 ATC	43-30 BBC
Gray		39 ABC	5 ATC	39 BBC
Hudson		42 ABC	8 ATC	55 BBC
Hupmobile 4	6 ATC	46 ABC	8 ATC	48 BBC
Hupmobile 8	4 ATC	51 ABC	On T C	47 BBC
lewett	On T C	40 ABC	10 ATC	40 BBC
Lincoln V8		45 ABC	On T C	48 BBC
Marmon	A 177 A	35 ABC	6 BTC	51 BBC
Moon A		46 ABC	1 ATC	
Oakland 6-54		40 ABC	5 ATC	45 BBC
Oldsmobile 30		50 ABC	3 ATC	42 BBC
Overland 91		35 ABC	10 ATC	45 BBC
Overland 93		45 ABC	5 ATC	39 BBC
		45 ABC	On T C	45 BBC
Packard 6		45 ABC	On T C	
Packard 8	20 100			45 BBC
Paige		40 ABC	8 ATC	40 BBC
Peerless 6		50 ABC	On T C	50 BBC
Peerless 8		47 ABC	On T C	47 BBC
Pierce-Arrow 80		50 ABC	5 ATC	45 BBC
Pierce-Arrow 33		45 ABC_	5 ATC	45 BBC
Reo		69-30' ABC		50-30 BBC
Rickenbacker 6	On T C		5 ATC	
Rollin		38 ABC	3 ATC	125 ATC
Star	4 ATC	46 ABC	1 ATC	
Studebaker ST 6		35 ABC	10 ATC	40 BBC
Studebaker Sp 6		37-30 ABC	11 ATC	47 BBC
Studebaker Big 6	7-30 ATC	37-30 ABC	11 ATC	47 BBC
Stutz		45 ABC	5 ATC	135 ATC
Willys Knight 65		40 ABC	On T C	45 BBC
Willys Knight 66		40 ABC	5 ATC	45 BBC
Wills Ste. Claire	10 ATC	35 ABC	5 ATC	40 BBC





Suggested Contract Prices for 277 Repair Operations

Compiled by Paul Dumas

HIS manual of suggested standardized repair charges is arranged so as to be of distinct benefit to the establishment doing repair work on more than one make of car. The prices listed are not guaranteed

as official factory data, and where the establish ment is official maintenance representative for a make listed, it is suggested that the official factory data for that make be used.

In most instances, the prices which represent the labor charge only, (Reo and Franklin excepted) are derived from multiplying the average hours required by \$1.50. Should a different hour rate seem advisable it is possible to convert the prices to conform to any desired hour rate by the following simple procedure:

To sell at \$1.00 per hour multiply the price listed on the chart by .67.

To sell at \$1.25 per hour multiply the price listed on the chart by .87.

To sell at \$2.00 per hour multiply the price listed on the chart by 1.33.

Some abbreviations are used in connection with

the wording of the operations and a list of them is contained below.

Abbreviations Defined

"R & R" means "remove and reinstall' and is applied to all parts or units that may require removal before actual repairs can be accomplished.

"F" means "front" and is applied to distinguish which wheel or which spring is referred to.

"Renew" means the removal of the part or unit and installation of a new one. In all cases where "renew"

is used in an operation it includes all hand or machine work necessary to install the unit or part.

"Incl." means included.

"Overhaul" when printed in bold face type includes the reconditioning and "R & R" of the unit or part covered by that operation.

> "R" when used in connection with operations involving the chassis springs is meant to distinguish between front and rear and identifies "rear." However, when "R" is used in connection with rear axle operations it is the abbreviation for "ring" as will be noted by reference to Operation No. R. 5. As used in operation No. E 19 "R" is the abbre-

viation for "rocker."
"Assbly." is the abbreviation for "assembly."

"Assbls." is the abbreviation for "assemblies."

"S" as used in connection with axle and springs is the abbreviation for "spring," in connection with steering gear operations it means steering.

"Instl." is the abbrevia-tion for "install."

Description of the repair work to be executed is arranged as a series of numbered operations run-

ning across the top of adjacent pages. These operations must of necessity be briefly complied, but unless otherwise specified (at the bottom of each page) the operation as sold is to include only such work as specifically mentioned in its wording. As an instance operations E45, T2, and E8 cover the removal of the parts or units mentioned, the tearing down, their inspection, and the reassembly and reinstallation without executing any repairs unless the new part required can be installed in the same time as the reinstallation of the old or original part. If such an operation has been sold and

(Continued on page 48)

HOW TO APPLY FLAT RATE TO CARS NOT LISTED IN SCHEDULE

ALTHOUGH the MOTOR AGE Flat Rate Manual does not cover every make of automobile it can be applied with a high degree of accuracy to more than 90 per cent of the passenger cars now in production. This is due to the fact that the cars listed in the schedules include practically every distinct type of construction being used today. This includes cars representing three different models of the Continental engine, several types of overhead-valve and eight-cylinder V type engines. The only air cooled car sold nationally is also covered. To use the chart to sell repairs on a car not listed proceed as fol-

Find out which car listed most closely resembles the car that you intend to repair. When doing this have in mind the particular unit that is to be repaired. Then select from the cars listed one that is in the same approximate price class, find the amount to charge as given in the schedule, and if the car is more than four years old add 20 per cent to the figure to take care of additional labor that might be required due solely to the age of the vehicle. If the car is less than two years old use the same price and if over two and less than three years old add 10 per cent to the price shown on the chart.

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(Operations Prefixed "A")

Front Axle

Rear Axle

A1-R&R axle center only.

A2—Same as A1 4-whl. brakes.

A3-Straighten axle after A1.

A4-R&R both knuckle assbis.

A5-Renew all knuckle & axle bushings, after A4.

A6-Same as A4 on 4-whl. brakes. Rear Wheels

A7—R&R grease, adjust & tram. wheels.

A8-Tram wheels only.

A9-Renew all cones and cups after A7. Brakes

A10-Rebush one knuckle & arm after A4

A11-R&R knuckles, bolts frozen.

A12-R&R & straighten tie rod.

A13-Renew one knuckle assbly.

A14-Renew hub or drum after A15.

A15-R&R only F. wheel.

REAR AXLE AND REAR WHEELS (Operations Prefixed "R".)

R1-R&R only axle assbly.

R2-R&R dismantle, reassble. & reinstall rear axle.

R3-Overhaul assbly, except brakes R1 Incl.

R4-R&R diff. carrier assbly.

(Rates listed are in dollars on the basis of labor charge at \$1.50 an hour.)

Some Suggested Prices for

Halek 4	CAR MAKE AND MODEL														-					
Halek 6.	Operation No.— A	L A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	R1	R2	R3	R4	R5
Halek 6.	Buick 4 7.2	0 9.60	3.60	5.20	1.20	6.00	2,25	1.45	4.80	.60	Time	1.90	3.00	1.00	.90	3.85		17.00	14.00	17.30
Cadilline S. 63.			3.60	5.20	1.20	6.00	2.25	1.45	4.80	.60	Time	1.90	3.00	1.00	.90	2.90		19.00	11.00	14.65
Cadillae S, 59-61																				
Chandler SS. 9.50 12.00 4.00 3.00 3.00 6.00 2.25 1.25 3.00 1.00 9.75 2.25 2.50 2.00 1.00 7.00 15.00 20.00 6.00 12.00 Chevrelet Sup. 1.50 2.25 2.40 5.50 2.25 1.75 1.50 2.5 6.15 1.20 7.75 7.5 3.00 4.75 6.75 6.75 6.75 6.75 Chrysler All. 6.00 6.00 5.75 3.20 5.75 2.25 120 7.75 1.50 2.5 6.15 1.20 7.75 7.75 3.00 4.75 6.75 6.75 Cheyeland 43 9.50 12.00 3.00 3.00 3.00 6.00 2.25 1.25 2.00 1.00 9.75 2.25 2.50 2.00 1.00 7.00 14.00 18.00 5.50 10.50 Cheyeland 43 9.50 12.00 3.00 3.00 4.00 4.00 4.00 3.00 1.00 7.75 1.75 7.75 1.00 1.00 7.00 14.00 18.00 5.50 10.50 Dargan A-22 6.00 9.00 4.00 4.00 4.00 6.00 2.20 1.00 3.00 1.00 Time 2.10 3.00 1.60 6.00 11.00 11.50 Essex 4 6.40 4.50 3.00 2.00 2.00 7.5 1.50 7.5 Time 2.25 2.15 1.50 1.00 4.50 11.25 3.00 8.0 Essex 6 6.40 4.50 1.50 1.50 1.50 1.50 1.50 7.5 Time 2.25 2.15 1.50 1.00 4.50 11.25 3.00 8.0 Essex 6 6.40 4.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1				5.20														37.00		21.00
Chevrolet Sup. 1.50																	15.00	20.00	6.00	12.00
Cleveland 43.				2.40	.50	*****				.25		1.20	1.20	.75	.75					
Dodge Hros. All.	Chrysler All 6.0	0 6.00		5.75	3.20	5.75	2.25	120	.75		8.75	2.75	2.25	1.50	1.20	3.75		12.00	6.00	9.00
Durant A-22	Cleveland 43 9.5	0 12.00	3.00	3.00	3.00	6.00	2.25	1.25	3.00	1.00	9.75	2.25	2.50	2.00	1.00	7.00	14.00	18.00	5.50	10.50
Essex 4 6.49 4.50 3.00 2.00 2.00 75 1.50 75 Time 2.25 2.25 1.50 1.00 4.75 11.25 3.00 8.0 Essex 6 6.40 4.50 3.00 2.00 2.00 75 1.50 75 Time 2.25 2.25 1.50 1.00 4.75 11.25 3.00 8.0 Pard T. 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.5	Dodge Bros. All 5.2	5	3.50	4.00	3.00	*****	3.00	1.20	.75	.75	Time	2.25	2.25	1.25	.90	4.50	12.00	16.50	*****	7.75
Essex 6	Durant A-22 6.0	0 9.00	4.00	4.00	4.00	6.00	2.20	1.00	3.00	1.00	Time	2.10	3.00	1.60	.60	*****	14.00	*****		16.00
Ford T	Essex 4 6.4	0	4.50	3.00	2.00		2.00	.75	1.50	.75	Time	2.25	2.25	1.50	1.00	4.75		11.25		
Franklin 10C 7.21 4.66 4.50 3.00 1.30 2.252 2.25 2.50 15.10 1.52 5.80 26.55 5.00 1 1.50 1.50 1.50 1.50 1.25 5.00 1.25 5.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Essex 6 6.4	0	4.50	3.00	2.00	*****	2.00	.75	1.50	.75	Time	2.25	2.25	1.50	1.00	4.50		11.25	3.00	8.00
Hugmobile 4 cyl. 3.14	Ford T		1.50	1.50	1.50	*****	1.25	.50	.75	0.75		1.25		.75	.50	2.50	******	8.00	*****	7.50
Hughon	Franklin 10C 7.2	1		4.66	4.50	*****	3.00	1.30	22.52	2.25		2.50	15.10	*****	1.25	5.80	26.55	*****	*****	56.36
Hupmobile 4 cyl. 3.10	Ford 1 Ton Truck		1.50	1.50	1.50		1.25	.50	.75	.75	*****	1.25	*****	.75	.50	4.75	*****	14.50	****	8.00
Jewett 2 brake	Hudson 6.4	0	5.00	3.00	2.00		2.00	.75	1.50	.75	Time	2.25	2.25	1.50	1.00	5.25	*****	*****	3.00	8.00
Jovetst 4 brake							2.40										14.00	19.00		
					3.40		3.40	.75	3.00	1.50	Time		1.90	3.75	.75					
Operation No.	Jewett 4 brake 9.2	5 9.00	5.50	7.50	4.50	4.50	3.25	.75	3.00	1.50	9.00	2.00	3.50	3.75	.75	6.00	16.00	21.00	6.50	14.00
Operation No.	Jordan 6—4 brake 6,0	0 9.00	5.00	7.50	4.50	4.50	2.00	.75	1.25	1.50	7.50	2.00	3.75	2.00	1.00	8.00	16.50	20.00	6.75	13.50
Lincoln 9.00	Jordan 8 9.0	0 9.00	5.00	7.50	4.50	4.50	2.00	.75	1.25	1.50	7.50	2.00	3.75	2.00	1.00	8.25	16.50	20.00	6.75	13.50
Marmon 74 8.50 11.50 5.25 6.00 4.50 2.00 1.50 4.80 2.25 Time 2.80 3.00 2.00 1.50 4.80 2.25 Time 2.25 7.51 1.00 1.50 3.75 5.20 3.00 7.50 1.00 6.00 4.80 2.25 1.50 7.50 1.00 1.50 7.50 1.00 6.00 4.80 3.00 3.00 3.00 3.00 3.00 1.50 Time 1.50 2.25 7.51 1.00 6.00 9.00 1.50 8.00 1.00 6.00 9.00 1.50 8.00 1.50 Time 1.50 2.25 7.51 1.00 1.50	Operation No.— A	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	R1	R2	R3	R4	R5
Maxwell 6.00 4.50 2.40 3.00 .75 1.50 .75 Time 2.25 2.25 .75 1.20 3.00 .75 5.2 Nash 7.50 10.00 6.00 4.50 3.00 3.00 1.25 1.00 1.50 Time 1.50 2.25 1.25 1.00 1.50 Time 1.50 2.25 1.25 1.00 1.50 Time 1.50 2.51 1.20 1.00 .75 3.00 9.00 1.50 3.00 6.00 4.00 3.00 6.00 1.25 1.00 1.50	Lincoln 9.0	0		6.00	3.00	*****	6.00	1.50	3.00		Time	3.00	4.00	2.25	1.50	*****	******		15.00	*****
Nash	Marmon 74 8.5	0 11.50	5.25	6.00	4.50	6.00	2.00	1.50	4.80	2.25	Time	2.80	3.00	2.00	1.00	12.50		36.00	17.00	
Oakland 44-54. 3.00 4.20 2.75 1.80 2.70 1.65 2.25 .75 2.25 1.20 Time 1.30 2.00 1.00 .75 3.25 9.25 2.70 6.00 Oldsmobile 6-30. 5.75 2.25 .75 4.00 1.00 1.90 1.25 6.00 .75 1.50 6.00 7.50 1.50 6.00 8.2 Overland 4 to 92 6.00 2.25 1.50 2.75 1.20 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50	Maxwell 6.0	0		4.50	2.40	*****	3.00	.75	1.50	.75	Time	2,25	2.25	.75	1.20	3.00	*****	7.50	3.75	5.25
Oldsmobile 6-30	Nash 7.5	0 10.00	6.00	4.50	3.00	3.00	3.00	1.25	1.00	1.50	Time	1.50	2.25	1.25	1.00	6.00	9.00	15.00	3.00	6.75
Overland 4 to 92	Oakland 44-54 3.0	0 4.20	2.75	1.30	2.70	1.65	2.25	.75	2.25	1.20	Time	1.30	2.00	1.00	.75	3.25	*****	9.25	2.70	6.00
Packard 6 12.00 12.00 5.00 9.00 4.50 9.00 6.00 3.00 6.00 Time 4.50 3.00 1.50 18.70 Packard 8 12.00 12.00 5.00 9.00 4.75 9.00 6.00 3.00 6.00 Time 4.50 3.00 1.50 15.00 18.7 Paige 10A Cont 7.50 6.00 3.75 3.20 2.75 1.50 4.50 1.50 Time 2.75 2.00 3.75 86 6.00 6.50 11.00 Peerless 8, 66 5.50 7.00 5.50 5.40 3.00 3.00 2.00 1.00 2.50 1.50 6.25 1.50 3.00 1.50 7.0 6.40 11.00 Pierce Arrow 80 12.00 8.25 5.00 9.00 5.00 9.00 6.00 3.00 6.00 Time 4.50 3.00 1.50 1.60 6.00 16.00 16.00 16.00				2.25	.75		4.00	1.00	1.90	1.25	6.00	.75	1.50	1.50	1.25	6.00	7.50	15.00	6.00	8.25
Packard S. 12.00 12.00 5.00 9.00 4.75 9.00 6.00 3.00 6.00 3.00 1.50 1.50 18.70 Paige 10A Cont. 7.50 6.00 3.75 3.20 2.75 1.50 4.50 1.50 Time 2.75 2.00 3.75 .85 6.00 6.50 11.7 Peerless 8, 66 5.50 7.00 5.50 5.40 3.00 3.60 2.00 1.00 2.50 1.50 6.25 1.50 3.00 1.50 70 6.40 11.00 Pierce Arrow 80 12.00 8.25 5.00 9.00 5.00 9.00 6.00 3.00 6.00 1.50 6.25 1.50 3.00 1.50 70 6.40 11.00 10.00 2.00 1.50 6.25 1.50 3.00 1.50 70 6.40 11.00 Reo T6 6.00 4.00 5.00 8.75 2.40 90 4.40				2.25	1.50	*****	2.75	1.20	1.50	.75	Time	1.60	1.25	1.75	1.25	3.00	*****			
Paige 10A Cont. 7.50 6.00 3.75 3.20 2.75 1.50 4.50 1.50 Time 2.75 2.00 3.75 85 6.00 6.50 11.7 Peerless 8, 66 5.50 7.00 5.50 5.40 3.00 3.60 2.00 1.00 2.50 1.50 6.25 1.50 3.00 1.50 70 6.40 11.0 Pierce Arrow 80 12.00 8.25 5.00 9.00 5.00 9.00 6.00 3.00 6.00 4.50 3.00 1.50 16.00 20.0 10.00 2.50 1.50 6.25 1.50 3.00 1.50 6.25 1.50 3.00 1.50 6.40 11.0	Packard 612.0	0 12.00	5.00	9.00	4.50	9.00	6.00	3.00	6.00	*****	Time	*****	4.50	3.00	1.50	*****	*****			
Peerless S, 66. 5.50 7.00 5.50 5.40 3.00 3.60 2.00 1.00 2.50 1.50 6.25 1.50 3.00 1.50 .70 6.40 11.0 Plerce Arrow 80. 12.00 8.25 5.00 9.00 5.00 9.00 6.00 3.00 6.00 Time 4.50 3.00 1.50 16.00 20.0 Reo T6. 6.00 4.00 5.00 8.75 2.40 90 4.40 6.50 2.80 11.60 60 60 6.60 40.0 Rick 6 Early 8.25 8.25 6.00 3.00 6.00 4.50 2.25 1.35 1.50 Time 2.25 .75 3.00 .90 5.00 11.25 9.0 Star 1925 4.00 4.00 2.50 3.50 3.20 3.50 1.70 .50 2.00 1.00 Time 1.30 1.75 .50 .60 11.00 10.00 11.5 Studebaker Big Special. 7.50 8.50 4.50 6.00 4.75 7.00 2.90 .75 3.00 1.20 Time 1.75 3.00 2.25 1.00 22.00 10.50 15.0 Studebaker Light 7.50 8.50 4.50 6.00 4.75 7.00 2.90 .75 3.00 1.20 Time 1.75 3.00 2.25 1.00 22.00 10.50 15.0 Studebaker Light 7.50 6.00 6.50 4.50 3.00 3.00 3.00 3.00 3.00 1.20 Time 1.00 1.90 1.90 1.90 1.90 1.90 1.90 1.90	Packard 812.0	0.12.00	5.00	9.00	4.75	9.00	6.00	3.00	6.00	*****	Time	*****	4.50	3.00	1.50		*****	*****		
Pierce Arrow 80 12.00 8.25 5.00 9.00 5.00 9.00 6.00 3.00 6.00 Time 4.50 3.00 1.50 16.00 20.0 Reo T6 6.00 4.00 5.00 8.75 2.40 90 4.40 6.50 2.80 11.60 60 6.60 4.00 4.00 4.00 5.00 8.75 2.40 90 4.40 6.50 2.80 11.60 60 6.60 4.60 4.00 4.00 4.00 5.00 8.75 2.40 90 4.40 6.50 2.80 11.60 60 6.60 4.60 4.00 4.00 4.00 8.50 8.50 8.50 8.50 8.50 8.50 8.50 3.50 3.20 3.50 1.70 50 2.00 1.00 Time 2.25 7.5 3.00 9.00 9.00 9.00 1.125 9.0 Star 1925 4.00 4.00 2.50 3.50 3.20 3.50 <	Paige 10A Cont 7.5	0	6.00	3.75	3.20	*****	2.75	1.50	4.50	1.50	Time	2.75	2.00	3.75	.85	6.00		*****	6.50	11.75
Reo T6 6.00 4.00 5.00 8.75 2.40 .90 4.40 6.50 2.80					3.00	3.00	2.00	1.00	2.50	1.50	6.25	1.50	3.00	1.50	.70					
Reo F & V Speed					5.00	9.00	6.00	3.00	6.00	*****	Time	*****	4.50	3.00	1.50	******	*****	*****		
Rick. 6 Early 8.25 8.25 6.00 3.00 6.00 4.50 2.25 1.35 1.50 Time 2.25 .75 3.00 .90 5.00 11.25 9.0 Star 1925 4.00 4.00 2.50 3.50 3.20 3.50 1.70 50 2.00 1.00 Time 1.30 1.75 5.0 60 11.00 10.00 11.5 Studebaker Big Special. 7.50 8.50 4.50 6.00 4.75 7.00 2.90 .75 3.00 1.20 Time 1.75 3.00 2.25 1.00 22.00 10.50 15.0 Studebaker Light 7.50 8.50 4.50 6.00 4.75 7.00 2.90 .75 3.00 1.20 Time 1.75 3.00 2.25 1.00 22.00 10.50 15.0 Stutz 6-95 6.00 4.50 3.00 3.00 3.00 1.20 Time 1.75 3.00 2.25 1.00 22.00 10.50 13.0			4.00	5.00	8.75	*****	2.40	.90	*****	4.40	6.50	2.80		11.60	.60			*****		
Star 1925 4.00 4.00 2.50 3.50 3.20 3.50 1.70 .50 2.00 1.00 Time 1.30 1.75 .50 .60 11.00 10.00 11.50 Studebaker Big Special. 7.50 8.50 4.50 6.00 4.75 7.00 2.90 .75 3.00 1.20 Time 1.75 3.00 2.25 1.00 22.00 10.50 15.0 Studebaker Light 7.50 8.50 4.50 6.00 4.75 7.00 2.90 .75 3.00 1.20 Time 1.75 3.00 2.25 1.00 22.00 10.50 15.0 Studebaker Light 7.50 8.50 4.50 6.00 4.75 7.00 2.90 .75 3.00 1.20 Time 1.75 3.00 2.25 1.00 2.20 10.50 15.0 Stude baker Light 7.50 8.50 4.50 3.00 3.00 .75 1.65 .75 Time 1.75 3.00 2.25 1.00 2.00 1.50 1.50 1.00 1.00			4.00	5.00	8.75	*****	2.40	.90	******	4.40	6.50	2.80	******	11.60	.60	******		*****	4.60	
Studebaker Big Special. 7.50 8.50 4.50 6.00 4.75 7.00 2.90 .75 3.00 1.20 Time 1.75 3.00 2.25 1.00 22.00 10.50 15.0 Stude baker Light 7.50 8.50 4.50 6.00 4.75 7.00 2.90 .75 3.00 1.20 Time 1.75 3.00 2.25 1.00 22.00 10.50 15.0 Stutz 6-95 6.00 6.50 4.50 3.00 3.00 .75 1.65 .75 Time 1.60 2.50 .75 1.20 10.50 13.0 Velie 56 & 58 7.50 9.00 6.00 3.25 2.50 2.75 .75 3.25 1.50 Time 1.90 1.90 1.90 1.90 6.00 3.75 8.2 Willys K. 4 4.50 3.00 4.50 3.75 1.50 3.00 Time 2.00 3.00 1.25 3.00 12.75 6.75 9.0						6.00	4.50	2.25	1.35	1.50	Time	2.25	.75	3.00	.90	5.00	*****			
Studebaker Light 7.50 8.50 4.50 6.00 4.75 7.00 2.90 .75 3.00 1.20 Time 1.75 3.00 2.25 1.00 22.00 10.50 15.0 Stutz 6-95 6.00 6.50 4.50 3.00 3.00 .75 1.65 .75 Time 1.60 2.50 .75 1.20 10.50 13.0 Velie 56 & 58 7.50 9.00 6.00 3.25 2.50 2.75 .75 3.25 1.50 Time 1.90 1.90 1.90 1.20 6.00 3.75 8.2 Willys K. 4 4.50 3.00 4.50 3.75 1.50 3.00 Time 2.00 3.00 3.00 12.75 6.75 9.0	Star 1925 4.0	0 4.00	2.50	3.50	3.20	3.50	1.70	.50	2.00	1.00	Time	1.30	1.75	.50	.60	*****	11.00	*****	10.00	11.50
Stutz 6-95																				
Velie 56 & 58. 7.50 9.00 6.00 3.25 2.50 2.75 .75 3.25 1.50 Time 1.90 1						7.00												22.00	10.50	
Willys K. 4						*****												*****		
					2.50	*****				1.50						6.00				
Operation No A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 R1 R2 R3 R4 R5	Willys K. 4 4.5	0	3.00	4.50	*****	*****	3.75	1.50	3.00	*****	Time	2.00	3.00	3.00	1.25	3.00	*****	12.75	6.75	9.00
	Operation No.— A	t A2	A3	A4	A 5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	R1	R2	R3	R4	R5

Definitions of Repair Operations

R5-Renew R. gear & pinion. R6 incl.

R6-Adjust R. gear & pinion mesh.

R7-Renew R. gear & pinion after R4.

R8-Renew pinion shaft bearings.

Rs_R&R only torque arm assbly.

R10-Renew T. arm R. pin & bushings, after R9.

R11-R&R torque tube.

R12-R&R one rear wheel assbly.

R13-Renew axle outer bearing after R12 1 side.

R14-R&R diff. cover, wash & inspect gears.

R15-Renew one axle shaft.

BRAKES, WHEEL & TRANSMISSION (Operations Prefixed "B".)

B1-Reline & adjust front & rear service brakes.

B2-Reline & adjust outer rear brakes

B3-Reline & adjust inner rear brakes

only. B4—Reline inner shoe. Shoe removed.B5—Reline outer band. Band removed.

B6—Reline & adjust trans. brake, R&R

B7—Adjust service brakes. B8—Adjust emergency brakes. B9—Adjust trans. brake.

B10-Adjust all wheel brakes.

Front Axle

Rear Axle

Rear Wheels

Brakes

Operations Defined Above

Franklin and Reo prices include labor and materials;

\$\begin{align*} \begin{align*} \begi	B8 B9 B10 —Operation No.	B8 1	B7	B6	B5	B4	B3	B2	B1	R15	R14	R13	R12	R11	R10	RD	R8	R7	R6
	0 2.00 6.00 Buick 4	2.00	4.40		1.00	1.00	6.40	6.60	10.60	*****	1.95		1.90	******			18.25		1.70
											1.95			*****	*****				
1,00			4.20	******	1.25							.50	2.20	******					
\$5.50 0.0 4.50		3.00	2.75	******	1.25	1.25	9.60	9.40	******	4.00	2.20	.50	2.20	******	*****		******		
\$\frac{5.55}{6.50} & 6.00 \text{\text{\$0.00}} & \text{\$1.50} & \frac{5.00}{1.50} & \frac{1.50}{1.50} & \frac{1.50}	.75 .75 1.50Chandler SS	.75	1.50	4.00	1.50	*****	******	6.00	10.60	3.00	2.00	4.00	1.50	*****	*****	*****	4.50	6.00	
1.00 1.00 4.00 1.150 3.50 1.75 3.00 1.060 6.00 1.25 3.75 1.50 7.5 7.5 2.00 2.00 2.25 1.99 1.90 7.50 6.00 1.50 1.50 1.75 2.00 2.00 2.00 2.50 1.00 6.00 1.00 1.25 1.25 3.00 2.00 3.75 Durant A - 22 3.00 7.50	5 .75 2.00 Chevrolet Sup.	.75 .	.75	******	.75	.75	4.50	4.50	*****	6.00	*****	*****	.50	2.55	*****	*****	******	1.25	6.00
1.75 5.25 6.75	75 .75 Chrysler All.	.75	*****	4.50	1.20	******	******	7.20	9.50	2.25	2.00	1.50	1.20	*****	*****	*****	6.00	4.50	5.25
1.00 2.00 5.00 1.00 2.00 2.50 1.100 6.00 6.00 1.25 1.25 3.00 2.00 3.75 Durant A-22 2.00 7.50 1.40 2.00 2.00 2.00 7.50 7.50 1.25 1.00 1.25 3.00 3.75 Easex 4 3.80 5.25 1.40 2.00 2.00 1.50 7.50 7.50 1.25 1.00 1.25 3.00 3.75 Easex 4 3.80 5.25 1.40 2.00 2.00 1.50 7.50 1.55 1.50 1.55 1.50 1.55 1.50 1.55 1.50 1.55 1.50 1.55 1.50 1.55 1.50 1.55 1.50 1.55 1.50 1.55 1.50 1.55 1.50 1.55 1.50 1.55 1.50 1.55 1.50 1.55 1.50 1.25 1.00 1.25 3.00 3.75 Easex 4 3.00 3.25 3.25 3.		.75	1.50	3.75	1.25			6.00	10.60		1.75		1.50			*****	4.00	5.00	3.00
2.00											1.90		1.20	12.00	*****	*****	6.75	5.25	3.75
1.00									11.00						*****	*****		2.00	4.00
S	5 3.00 3.75 Essex 4	3.00 .	1.25	******	1.00	1.25	7.50	7.50	*******	2.00	2.00	2.00	1.40	******	*****	******	7.50	*****	3.00
38,06 31.70			1.25	******	1.00	1.25	7.50	7.50	*******		2.00		1.40			*****	5.25	*****	3.00
1,25			*****			*****	1.65				*****			4.50	*****	*****			*****
1.40 2.00			*****	4.90	3.55			11.70							*****	*****	31.70		
199 4.25 3.00														8.00	*****	*****		1.25	*****
4.00 \$.25 \$.90	3.00 3.75 Hudson	3.00 .	1.25	*****	1.00	1.25	7.50	7.50	*******	2.00	2.00	2.00	1.40		*****	*****	7.50		3.00
4.00 3.25 9.00 1.25 2.25 2.75 11.00 7.00 1.25 4.25 1.50 7.5 Jewett 4 brake 3.50 5.25 7.50 1.50						.75								*****	*****				
Section Sect												000000		*****		*****		-	
Re R7 R8 R9 R10 R11 R12 R13 R14 R15 B1 B2 B3 B4 B5 B6 B7 B8 H9 B10 —Operation No. 1.50 1						*****								*****	*****				
Section Sect						******								******	*****				
34.00 6.00	7 BS B9 B10 —Operation No.	В8	B7	В6	В5	B4	В3	B2	B1	R15	R14	R13	R12	R11	R10	R9	RS	R7	R6
34.00 6.00	0 2.50 4.50 Lincoln	2.50	1.50			******	*****	10.50	*******	2.25	2.75	*****	*****	9.00					6.00
4.20 2.00 5.25					1.00						******	1.75	1.50		******	*****		6.00	34.00
1.50		1.50	******	2.25	.85	*****	*****	6.00	*******	2.25	1.75	.50	1.25	*****	******	*****	5.25	2.00	4.20
1.25 2.25 6.75	75 1.25 1.25 Nash	1.25	2.75	2.75	1.00	1.00	*****	8.50	11.00	2.75	1.50	1.25	1.25			*****	6.75	4.50	2.25
6.00 2.00 7.50	5 1.50 .40 2.25Oakland 44-54	1.50	2.25	1.50	.60	.70	5.50	5.50	10.00	*5.25	1.65	.65	.80	4.00	*****	*****	2.75	2.00	1.50
1.00 3.75 3.75 1.75 1.50 3.00 19.50 11.00 12.00 1.00 3.00 2.75 5.25 Packard 1.00 3.75 3.75 1.75 1.50 3.00 19.50 11.00 12.00 1.00 3.00 2.75 5.25 Packard 2.75 8.90 1.25 2.20 2.75 16.00 9.00 9.75 1.25 1.50 2.25 Paige 10A Cont 2.75 5.00 3.60 2.25 2.40 1.25 1.40 2.25 2.75 6.50 6.50 1.00 1.00 1.50 2.50 2.25 Peerless 8—Model 60 1.00 3.75 3.80 3.15 3.00 20.00 11.00 1.00 1.00 3.00 3.00 6.00 Pierce Arrow 80 3.60 23.35 2.00 1.40 9.50 2.25 15.50 16.20 15.00 3.80 3.40 7.35 Reo F & V Speed 4.50		*****	.75	*****	2.25	*****	*****	4.90	*******	1.50	*****	1.25	.50	*****	*****	*****	6.75	2.25	
1.00 3.75											0.75	0.40		4.50		*****	7.50		
2.75 5.00 3.60 2.25 2.40 1.25 1.40 2.25 2.75 6.50 6.50 1.00 1.00 1.50 2.25 2.25 Peerless 8—Model 66 1.00 3.75 3.80 3.15 3.00 20.00 11.00 12.00 1.00 1.00 3.00 3.00 6.00 Pierce Arrow 80 3.80 23.35 2.00 1.40 9.50 2.25 15.50 16.20 15.00 3.80 3.40 7.35 Reo F & V Speed 4.50 3.50 6.00 1.50 3.50 6.00 1.50 3.50 6.00 1.50 3.50 6.00 1.50 3.50 6.00 1.50 3.50 6.00 1.50 3.50 6.00 1.50 3.50 6.00 1.50 3.50 6.00 1.50 3.50 6.00 1.50 3.50 6.00 1.50 3.00 3.00 3.00 3.00 3.00 3.00 3.00 3											*****	*****		*****			*****		
2.75 5.00 3.60 2.25 2.40 1.25 1.40 2.25 2.75 6.50 6.50 1.00 1.50 2.50 2.25 Peerless S—Model 6 1.00 3.75 3.80 3.15 3.00 20.00 11.00 1.00 1.00 3.00 3.00 6.00 Pierce Arrow 8 3.60 23.35 2.00 1.40 9.50 2.25 15.50 16.20 15.00 3.80 3.40 7.35 Reo F & V Speed 4.50 2.3,35 2.00 1.40 6.00 2.25 15.50 16.20 15.00 3.80 3.40 7.35 Reo F & V Speed 4.50 3.50 6.00 1.50 3.00 2.25 2.35 10.50 5.50 5.0 3.40 2.00 60 60 2.25 Rick. 6 Early 2.50 2.00 2.50 1.00 60 1.60 4.00 4.00 4.00 1.00 1.00 1.60 Star 192 12.00												******		*****	1.75	3.75			1.00
1.00 3.75 3.80 3.15 3.00 20.00 11.00 12.00 1.00 3.00 3.00 6.00 Pierce Arrow 8 3.60 23.35 2.00 1.40 9.50 2.25 15.50 16.20 15.00 3.80 3.40 7.35 Reo T 3.60 23.35 2.00 1.40 6.00 2.25 15.50 16.20 15.00 3.80 3.40 7.35 Reo F & V Spece 4.50 3.50 6.00 1.50 3.00 2.25 2.35 10.50 5.50 50 3.40 2.00 60 2.25 Rick & Early *2.50 2.00 2.50 1.00 60 1.60 4.00 4.00 4.00 1.00 1.00 1.60 Star 192 12.00 3.50 7.50 1.50 .75 1.25 2.25 18.00 6.00 6.00 1.00 1.50 3.75 Studebaker Big Special 12.00 3.50 7.50 1.50 .75 1.25 2.25 6.00 6.00 1.00 1.50 3	0 2.25 3.25Palge 10A Cont.	2.25	1.50	*****	1.25	1.25	9.75	9.00	16.00	2.75	2.20	*****	1.25	******	******	*****	8.90	3.25	-
3.60 23,35 2.00 1.40 9.50 2.25 15.50 16.20 15.00 3.80 3.40 7.35 Reo T 3.60 23.35 2.00 1.40 6.00 2.25 15.50 16.20 15.00 3.80 3.40 7.35 Reo F & V Speed 4.50 3.50 6.00 1.50 3.00 2.25 2.35 10.50 5.50 50 3.40 2.00 60 60 2.25 Rick G Early *2.50 2.00 2.50 1.00 .60 4.00 4.00 4.00 1.00 1.00 1.60 Star 192 12.00 3.50 7.50 1.50 .75 1.25 2.25 18.00 6.00 6.00 1.00 1.50 3.00 3.75 Studebaker Big Special 12.00 3.50 7.50 1.50 .75 1.25 2.25 6.00 6.00 1.00 1.50 3.75 Studebaker Ligh 12.00 3.50 7.50 1.90 2.40 1.00 3.00 9.00 1.50 1.20 1.5											2.25	1.40		*****	2.40				
3.60 23,35 2.00 1.40 6.00 2.25 15.50 16.20 15.00 3.80 3.40 7.35 Reo F & V Speed 4.50 3.50 6.00 1.50 3.00 2.25 2.35 10.50 5.50 5.50 3.40 2.00 60 2.25 Rick. 6 Early *2.50 2.00 2.50 1.00 60 1.60 4.00 4.00 4.00 1.00 1.00 1.60 Star 192 12.00 3.50 7.50 1.50 .75 1.25 2.25 18.00 6.00 6.00 1.00 1.50 3.00 3.75 Studebaker Big Special Studebaker Light 12.00 3.50 7.50 1.50 .75 1.25 2.25 6.00 6.00 1.00 1.50 3.00 3.75 Studebaker Light 12.00 3.50 7.50 1.90 2.40 1.00 3.00 9.00 10.50 1.20 1.50 3.75 Studebaker Light 12.00 3.50 7.50 1.50 1.50 3.00 9.05 6.80					1.00	1.00					******	*****		*****	******				
4.50 3.50 6.00 1.50 3.00 2.25 2.35 10.50 5.50 50 3.40 2.00 60 60 2.25 Rick, 6 Early *2.50 2.00 2.50 1.00 60 1.60 4.00 4.00 4.00 1.00 1.00 1.60 Star 192 12.00 3.50 7.50 1.50 .75 1.25 2.25 18.00 6.00 6.00 1.00 1.50 3.00 3.75 Studebaker Big Special Star 192 12.00 3.50 7.50 1.50 .75 1.25 2.25 6.00 6.00 1.00 1.50 3.00 3.75 Studebaker Big Special Star 192 12.00 3.50 7.50 1.50 .75 1.25 2.25 6.00 6.00 1.00 1.00 3.00 3.75 Studebaker Light					*****	*****								*****	*****				
*2.50 2.00 2.50					*****									*****	*****	2.00			
12.00 3.50 7.50						.50					2.25				*****	*****			
12.00 3.50 7.50 1.50 .75 1.25 2.25 6.00 6.00 1.00 1.50 3.00 3.75 Studebaker Light	0 1.00 1.60Star 1920	1.00	1.00		.40	*****	4.00	4.00	*******	1.60	******	.60	1.00	*****	*****	*****	2.50	2.00	2.00
2.25 4.50 6.75 1.90 1.50 1.00 3.00 9.05 6.80 .75 .75 1.50 1.50 2.26 Stutz 6-9 6.00 2.00 7.50 1.50 .75 1.25 *1.50 6.00 6.75 .75 1.50 1.00 3.00 Willys K.														*****	*****	*****			
2.25 4.50 6.75 1.90 1.50 1.00 3.00 9.05 6.80 .75 .75 1.50 1.50 3.20 Velle 56 & 5 6.00 2.00 7.50 1.50 .75 1.25 *1.50 6.00 6.75 .75 1.50 1.00 3.00 Willys K.															*****	*****	****		
6.00 2.00 7.50 1.50 .75 1.25 *1.50 6.00 6.75 .75 1.50 1.00 3.00 Willys K.														*****	*****				
	10 1.50 3.20velie 58 & 58													******					
R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R1 H2 R3 R4 R5 R6 R7 R8 R9 R10 -Operation No.	0 100 900	2 4343	1 5 (1)		.75	.75	B. 75	0.00		-T.00	1.25	.75	1.50	******	*****	******	1.50	4.00	4,00

Operation R6 on Star Cars applies to solid type axle housing only.

^{*}Operation R15 on Model 20 Willys K. only \$3.75.

Brakes

B11—Reline & adjust 2-wheel brakes,

Carbureter

B12—Reline & adjust 4-wheel brakes,

B13—Drain system, refill new fluid, bleed lines and adjust hyd. brakes.

Manifold

B14-Renew R. wheel brake drum.

B15-Same as B14, wheel off.

Fuel System

B16-Renew F. brake drum.

B17—Renew as B16, wheel off.

B18—Renew brake rod or cable (1). B19—Free up all rear brake oper.

Engine B19—Free up all shafts or renew.

CARBURETER, INLET MANIFOLD AND FUEL SUPPLY SYSTEM

(Operations prefixed "F")

F1-Renew carbureter

F2-R&R clean & adjust carbureter.

F3-Clean & adjust without removing.

F4—R&R & clean gas tank.

F5—Clean tank and lines without removing.

F6-Renew manifold gaskets.

F7-Overhaul vacuum tank internals,

F8-R&R clean vacuum tank.

F9-Renew line tank to vacuum tank.

F10—Renew tank gas gage assembly.

F11-Set Carb. fuel level after F2.

(Rates listed are in dollars on the basis of labor charge at \$1.50 an hour.)

Some Suggested Prices for

	B11	B12	B13	B14	B15	B16	B17	B18	B19	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	FI
Buick 4	10.40	14.40		8.40	1.50	3.40	1.50	1.00	7.50	******	4.10	.60	*6.00	1.50		2,20	1.10	3.00	.75	.50
Bulck 6				3.40	1.50	3.40	1.50	1.00	7.50	*****	4.10	.60	6.00	1.50	******	2.20	1.10	3.00	.75	.50
Cadillac 59-61			*****	4.20	2.20	*****	*****	1.50		4.20	1.60		6.00	2.00	.80	*****	******	******	1.00	.40
Cadillac 8-63	17.25	25.25	*****	4.20	2.20	4.20	2.20	1.50	12.00	4.20	1.60	1.20	6.00	2.00	.80	*****	*****		1.00	.40
Chandler SS			*****	3.00	1.50	3.50	1.25	1.50	5.50	1.50	2.50	1.00	4.00	1.50	1.75	2.25	1.50	3.00	.75	.60
Chevrolet Sup	5.00		******	1.25	.75	*****	400-00	1.20	*****	.60	1.50	.30	1.25	1.00	.50	1.65	1.85	.75	*****	.71
Chrysler All			3.00	3.40	2.25	3.40	2.25			1.20	1.35	.85	1.20	1.00	3.75	1.90	1.00	3.75		.78
Cleveland 43			******	2.75	1.20	3.25	1.25	1.50	5.50	1.50		1.00	3.75	1.50	1.50	2.25	1.50	3.00	.75	.60
Dodge Bros. All			*****	3.40	2.25		*****	.75	6.00	.75	1.50	.75	1.90	1.35	.80	2.25	1.60	3.00	.75	.78
Durant A-22				2.60	1.60	2.60	2.00	*****	4.75	1.50	2.50	.90	3.75	2.75		1.60	1.20	1.60	.40	.60
Essex 4	10.50	0000000	*****	*****	1.45	*****	*****	1.25	*****	1.50	2.25	.60	3.00	1.50	1.50	2.25	1.20	3.00	.75	.50
Essex 6					1.45	*****	******	1.25	*****	1.50	2.25	.60	3.00	1.50	1.50	2.25	1.20	3.00	.75	.50
Ford T			*****	1.25	.50			.60	*****	.75	1.25	.85	3.00	.45	1.10	*****		.85		.60
Franklin 10C			******	4.28	3.33	*****	*****	2.63		28.35	3.00		1.15	1.00		*1.75	1.40	2.65	5.32	1.00
Ford 1 Ton Truck				2.00	1.00	*****	*****	1.25	3.50	.75	1.25	.35	3.00	.45	1.10		4.00	.85		.60
Hudson	10.50	*******	******	2.65	1.45		*****	1.25	5.50	1.50	2.25	.65	3.00	1.50	1.50	2.25	1.20	3.00	.75	.50
Hupmobile 4 Cyl				3.00	1.75	*****	*****	1.50	6.00	1.50	1.90		1.00	.90	.75	2.25	1.20	3.00	.75	.60
Jewett 2 brake				3.00	1.90		1.00	1.50	6.00	1.20	1.75	.75	3.00	1.25	1.90	1.50	1.20	1.50	.75	.50
Jewett 4 brake				3.00	1.90	3.00	1.90	1.50	*****	1.20	1.75	.75	3.00	1.25	1.90	1.50	1.20	1.50	.75	.50
Jordan 6				2.50	1.00	2.50	1.00	*****		1.00	2.50	.50	3.50	1.50	3.50	2.25	1.00	3.75	.50	1.78
Jordan 8				2.50	1.00	2.50	1.00	*****	*****	1.00	1.75	.50	3.50	1.50	3.50	2.25	.50	3.75	.50	1.78
Operation No.—	B11	B12	B13	B14	B15	B16	B17	B18	B19	F1	F2	F3	F4	F5	F6	F7	F8	FD	F10	F11
Lincoln				4.20	2.20		*****		9.00	3.00	4.00	1.00	3.50	1.50	2.00	*****	*****	4.75	.75	.50
Marmon 74				3.80	1.50	3.80	1.50	1.10		1.60	3.20	*****	4.00	1.80	1.50	2.50	1.50	2.25	1.40	.60
Maxwell				3.00	1.50			.50	4.50	.75	1.15	.60	.95	1.25	1.90	1.90	.90	3.00	1.20	.71
Nash				2.50	1.25	2.50	1.25	.75	4 70	1.50	2.50		4.50	1.50	1.50		1.50	1.50	*****	41
Oakland 44-54	9.00	12.00	*****	1.50	.95	.90	.60		4.50	1.05	1.50	.60	1.75	1.00	.80	.85	.75	*****		.41
		-						.00												
Oldsmobile 6-30		•••••		3.00	1.50			.50	4.75	.50	1.20	.60	1.90	1.25		2.00	1.25	.75		.50
Overland 4 to 92	6.00	*******	*****	4.50	1.50 2.90	*****	*****	.50 .75	4.75 4.50	.50 1.20	1.20 1.50	.65	3.00	1.00	1.50	*****		1.20	******	.80
Overland 4 to 92 Packard 6	6.00	23.00	******	4.50 3.00	1.50 2.90	3.00	*****	.50 .75 1.50	4.75 4.50 7.50	.50 1.20 2.00	1.20 1.50 3.00	.65	3.00 8.00	1.00 3.80	1.50 1.75	4.50	3.00	1.20	.75	3.00
Overland 4 to 92	6.00	23.00 24.00	******	4.50	1.50 2.90	*****	*****	.50 .75	4.75 4.50	.50 1.20	1.20 1.50	.65	3.00	1.00	1.50	*****	3.00	1.20	******	.80
Overland 4 to 92	6.00	23.00	******	4.50 3.00 8.00 3.00	1.50 2.90 1.90	3.00	00000	.50 .75 1.50 1.50 1.50	4.75 4.50 7.50 7.50 6.50	.50 1.20 2.00 2.00 1.20	1.20 1.50 3.00 3.00 1.75	.75	3.00 8.00 8.00 4.50	1.00 3.80 3.80 1.75	1.75 1.75 1.75 1.90	4.50 4.50 1.50	3.00 3.00 1.20	1.20	.75 .75	3.00 3.00 .40
Overland 4 to 92	14.75 13.00	23.00		4.50 3.00 8.00 3.00 2.50	1.50 2.90 1.90	3.00 3.00 2.20	1.50	.50 .75 1.50 1.50 1.50	4.75 4.50 7.50 7.50	.50 1.20 2.00 2.00 1.20	1.20 1.50 3.00 3.00 1.75	.75	3.00 8.00 8.00	1.00 3.80 3.80 1.75	1.50 1.75 1.75 1.90	4.50 4.50	3.00 3.00 1.20	1.20 1.50 4.00	.75 .75 .75	3.00 3.00
Overland 4 to 92	14.75	23.00 24.00 15.00		4.50 3.00 8.00 3.00 2.50	1.50 2.90 1.90	3.00 3.00 3.00	1.50	.50 .75 1.50 1.50 1.50	4.75 4.50 7.50 7.50 6.50	.50 1.20 2.00 2.00 1.20	1.20 1.50 3.00 3.00 1.75	.75	3.00 8.00 8.00 4.50	1.00 3.80 3.80 1.75	1.50 1.75 1.75 1.90	4.50 4.50 1.50	3.00 3.00 1.20	1.50	.76 .75 .75	3.00 3.00 .40
Overland 4 to 92	14.75 13.00 27.15	23.00 24.00	000000	4.50 3.00 8.00 3.00 2.50 26.30	1.50 2.90 1.90 1.50 24.90	3.00	1.50	.50 .75 1.50 1.50 1.50	4.75 4.50 7.50 7.50 6.50 10.00	.50 1.20 2.00 2.00 1.20 .80	1.20 1.50 3.00 3.00 1.75 1.50	.65 .75 .50	8.00 8.00 8.00 4.50	1.00 3.80 3.80 1.75 1.40	1.50 1.75 1.75 1.90	4.50 4.50 1.50	3.00 3.00 1.20 1.00	1.20 1.50 4.00 4.60	.75 .75 .75	3.00 3.00 .40
Overland 4 to 92	14.75 13.00 27.15 27.15	23.00 24.00		4.50 3.00 8.00 3.00 2.50 26.30	1.50 2.90 1.90 1.50 24.90 24.90	3.00 8.00 2.20	1.50	.50 .75 1.50 1.50 1.50 1.00 	4.75 4.50 7.50 7.50 6.50 10.00 15.00 15.00	.50 1.20 2.00 2.00 1.20 .80 	1.20 1.50 3.00 3.00 1.75 1.50 2.20 1.20	.65 .75 .50 1.00	8.00 8.00 4.50 8.50	1.00 3.80 3.80 1.75 1.40 2.00 2.00	1.50 1.75 1.75 1.90 2.00 2.00	4.50 4.50 1.50	3.00 3.00 1.20 1.00 2.20 2.20	1.20 1.50 4.00 4.60 4.60	.75 .75 .75	.\$0 3.00 3.00 .40
Overland 4 to 92	14.75 13.00 27.15 27.15 6.00	23.00 24.00 15.00		4.50 3.00 8.00 3.00 2.50 26.30	1.50 2.90 1.90 1.50 24.90	3.00	1.50	.50 .75 1.50 1.50 1.50	4.75 4.50 7.50 7.50 6.50 10.00 15.00 15.00	.50 1.20 2.00 2.00 1.20 .80	1.20 1.50 3.00 3.00 1.75 1.50	.65 .75 .50	8.00 8.00 8.00 4.50	1.00 3.80 3.80 1.75 1.40	1.50 1.75 1.75 1.90	4.50 4.50 1.50	3.00 3.00 1.20 1.00	1.20 1.50 4.00 4.60	.75 .75 .75	.80 3.00 3.00 .40 .60
Overland 4 to 92	14.75 13.00 27.15 27.15 6.00 5.75	23.00 24.00 15.00		4.50 3.00 8.00 3.00 2.50 26.30	1.50 2.90 1.90 1.50 24.90 24.90 1.75	3.00 3.00 2.20 3.00	1.50	.50 .75 1.50 1.50 1.50 1.00 3.80 3.80	4.75 4.50 7.50 7.50 6.50 10.00 15.00 6.00 3.00	.50 1.20 2.00 2.00 1.20 .80 	1.20 1.50 3.00 3.00 1.75 1.50 2.20 1.20 2.30 2.50	.65 .75 .50 1.00 1.00 .65	8.00 8.00 4.50 8.50 2.40 2.75	1.00 3.80 3.80 1.75 1.40 2.00 2.00 1.35 1.25	1.50 1.75 1.75 1.90 2.00 2.00	4.50 4.50 1.50 2.50 2.25 1.40	3.00 3.00 1.20 1.00 2.20 2.20 1.30	1.20 1.50 4.00 4.60 4.60 2.25	.75 .75 .75 .60	.80 3.00 3.00 .40 .60
Overland 4 to 92	14.75 13.00 27.15 27.15 6.00 5.75	23.00 24.00 15.00		4.50 3.00 8.00 2.50 26.30 3.25 2.00	1.50 2.90 1.90 1.50 24.90 24.90 1.75 1.00	3.00 3.00 2.20	1.50	.50 .75 1.50 1.50 1.50 1.00 	4.75 4.50 7.50 7.50 6.50 10.00 15.00 6.00 3.00	.50 1.20 2.00 2.00 1.20 .80 56.95 18.55 1.90 1.65	1.20 1.50 3.00 3.00 1.75 1.50 	.65 .75 .50 1.00 1.00 .65	8.00 8.00 4.50 8.50 2.40	1.00 3.80 3.80 1.75 1.40 2.00 2.00 1.35	1.50 1.75 1.75 1.90 2.00 2.00	4.50 4.50 1.50 2.50 2.25	3.00 3.00 1.20 1.00 2.20 2.20 1.30	1.20 1.50 4.00 4.60 4.60 2.25 .80	.75 .75 .75	.80 3.00 3.00 .40 .60 .50 .50
Overland 4 to 92	14.75 13.00 27.15 27.15 6.00 5.75 9.00 9.00	23.00 24.00 15.00		4.50 3.00 8.00 2.50 2.50 3.25 2.00 4.50	1.50 2.90 1.90 1.50 24.90 1.75 1.00	3.00 3.00 2.20 3.00	1.50	.50 .75 1.50 1.50 1.50 1.00 	4.75 4.50 7.50 7.50 6.50 10.00 15.00 6.00 3.00	.50 1.20 2.00 2.00 1.20 .80 .80 56.95 1.90 1.65	1.20 1.50 3.00 3.00 1.75 1.50 	.65 .75 .50 1.00 .65 .75	8.00 8.00 4.50 8.50 2.40 2.75	1.00 3.80 3.80 1.75 1.40 2.00 2.00 1.35 1.25	1.50 1.75 1.75 1.90 2.00 2.00	4.50 4.50 1.50 2.50 2.25 1.40	3.00 3.00 1.20 1.00 2.20 2.20 1.30 .90	1.20 1.50 4.00 4.60 4.60 2.25 .80	.75 .75 .75 .60	.80 3.00 .40 .60 .50 .50 .40 .50
Overland 4 to 92	14.75 13.00 27.15 27.15 6.00 5.75 9.00 9.00 13.50	23.00 24.00 15.00		4.50 3.00 8.00 3.00 2.50 26.30 3.25 2.00 4.50	1.50 2.90 1.90 1.50 24.90 1.75 1.00 3.00 3.00	3.00 3.00 2.20 3.00 4.25 4.25	1.50 2.15 3.25 3.25	.50 .75 1.50 1.50 1.50 1.00 	4.75 4.50 7.50 7.50 6.50 10.00 15.00 6.00 3.00 9.00 9.00 Time	.50 1.20 2.00 2.00 1.20 .80 .80 56.95 1.90 1.65	1.20 1.50 3.00 3.00 1.75 1.50 2.20 1.20 2.30 2.50 2.25	.65 .75 .50 1.00 1.00 .65 .75 1.50	8.00 8.00 4.50 8.50 2.40 2.75 3.25 3.25	1.00 3.80 3.80 1.75 1.40 2.00 2.00 1.35 1.25	1.50 1.75 1.75 1.90 2.00 2.00	4.50 4.50 1.50 2.50 2.25 1.40 2.25 2.25	3.00 3.00 1.20 1.00 2.20 2.20 1.30 .90	1.20 1.50 4.00 4.60 4.60 2.25 .80 2.50 2.50	.75 .75 .60 	.80 3.00 .40 .60 .50 .50 .40 .50 .50
Overland 4 to 92	14.75 13.00 27.15 27.15 6.00 5.75 9.00 9.00 13.50 12.00	23.00 24.00 15.00 19.00 18.00 17.00		4.50 3.00 8.00 2.50 26.30 3.25 2.00 4.50 2.75	1.50 2.90 1.90 1.50 24.90 24.90 1.75 1.00 3.00 3.00 1.75	3.00 3.00 2.20 3.00 4.25 4.25 2.75	1.50 2.15 3.25 3.25 1.75	.50 .75 1.50 1.50 1.50 1.00 3.80 .70 1.00 1.00 1.25	4.75 4.50 7.50 6.50 10.00 15.00 6.00 3.00 9.00 9.00 Time 5.00	.50 1.20 2.00 1.20 1.20 .80	1.20 1.50 3.00 3.00 1.75 1.50 2.20 1.20 2.30 2.50 2.25 2.25 2.65	.65 .75 .50 1.00 1.00 .65 .75 1.50 1.50	8.00 8.00 4.50 8.50 2.40 2.75 3.25 3.25 2.25	1.00 3.80 3.80 1.75 1.40 2.00 2.00 1.35 1.25 1.50 1.50	1.50 1.75 1.75 1.90 2.00 2.00 2.00	4.50 4.50 1.50 2.50 2.25 1.40 2.25 2.25 1.75	3.00 3.00 1.20 1.00 2.20 2.20 1.30 .90 1.50 1.50	1.20 1.50 4.00 4.60 4.60 2.25 .80 2.50 2.50 1.90	.75 .75 .75 .60 	.80 3.00 .40 .60 .50 .50 .40 .50

1

711

Repair **Operations**

ENGINE ASSEMBLY, COOLING AND LUBRICATION SYSTEM (Operations Prefixed "E")

F12-Renew carb, needle & seat after

E1-R&R engine assbly.

E2-Remove only engine assbly.

E3-Reinstall only engine assbly.

E4-R&R & strip one cyl. block for regrinding.

-R&R & strip all blocks for regrinding.

-R&R one cyl, head or gasket.

E7-R&R all cyl. heads.

-Inspect internal condition of engine, incl. R&R cyl. heads, oil pan, red & piston assbls., inspect & mike cyl., pistons, etc., & reassblc. R&R rod assblys. for inspection, E10 & E7 incl.

E10-R&R & clean oil pan

E11-Tighten all engine support boits. E12-Wash and paint engine.

E13-Tune engine, incl. clean & adjust breaker points & spark plugs, V. tank and carb. screens, check ign.

timing, adjust carb. tappets & fan belt.

E14-Clean carbon, grind valves, and E13.

E15-Grind only valves after E7.

E16-Renew all valve guides after E14.

E17-Ream old valve guides after ET4.

E18—Adjust all tappets. E19—Rebush all rocker arms & renew

Brakes

Carbureter

Manifold

Fuel System

Engine

Operations Defined Above

(Franklin and Reo prices include labor and materials; others labor only.)

1010	101	102	E3	E4	E5	E6	E7	108	159	E10	E11	E12	E12	1214	E15	EIR	B17	E18	MODEL E19—Operation No.
	13.00	5.00	8.00	-	******	3.10	3.10	5.00	4.00	1.90	*****	*****	2.40	9.40	2.50	3.10	*****	.95	Bulck 4
	13.00	5.00	8.00			5.50	5.50	7.00	4.40	1.90	******	********		10.40	3.00	4.80	*****	1.20	6.80Buick 6
	18.00			24.00		1.40		16.80		2.40	*****	5.50		20.00	9.00	6.40	*****	3.60	Cadillac 8, 59-61
	18.00			28.00		1.40		16.80		2.40	1 60	5.50		20.00	9.00	6.40		3.60	Cadillae 8, 63
	14.00	8.00		26.00		2.00		13.00	9.00	2.00		3.00		12.00	4.00	3.50	3.50	1.75	Chandler SS
.75	6.00	2.00	4.00	18.00	18.00	1.50	1.50	4.75	4.25	2.25	1.25	1.50	1.50	5.25	2.25	*****	5.00	.60	2.00 Chevrolet Sup.
1.00	14.70	6.00	8.70	24.50	24.50	1.50	1.50	7.50	6.00	1.20	2.75	4.50	2.25	10.50	5.00	4.75	*****	1.50	Chrysler All
.75	12.75	7.00	5.75	22.00	22.00	1.75	1.75	10.00	8.00	1.50	1.50	2.75	3.50	11.00	2.50	3.50	3.50	1.50	Cleveland 43
1.00	15.00	6.00	9.00	24.00	24.00	1.50	1.50	7.00	6.25	4.50	.90	3.00	3.00	9.00	3.00	9.00	9.00	1.20	Dodge Bros, All
1.10	11.00	4.50	6.50	21.00	21.00	3.00	3.00	7.30	6.00	2.00	******	3.50	3.00	9.00	3.00	*****		1.00	5.40Durant A-22
.50	11.00	4.50	6.50	12.00	12.00	3.75	3.75	12.00	4×54×4	3.00	1.50	3.00	2.70	9.00	3.00	2.25	turrer	1.50	Essex 4
.50	12.00	5.50	6.50	28.00	28.00	2.70	*****	13.50	200000	3.00	1.50	3.00	2.25	9.00	3.00	2.25	*****	1.20	Essex 6
.50	12.00	5.50	6.50	28.00	28.00	2.70		13.50	******	.75	.75	2.00	.50	4.75	1.75	2.00	2.00	*****	Ford T
	20.00	8.00	12.00	3.55	14.54	*****		27.00	25.50	11.40		*****	3.65	20.42	9.00	4.26	*****	1.18	Franklin 100
.75	6.50	*****	*****	13.00	******	1.00	1.00	3.50	2.75	.75	.75	2.00	.50	4.75	1.75	2.00	2.00	*****	Ford 1 Ton Truck
.50	15.00	6.00	9.00	18.00	18.00	3.00	*****	15.00	*****	3.00	1.50	3.00	2.70	10.50	3.00	2.25	*****	1.20	Hudson
1.15	13.50	5.50	8.00	*****	23.00	1.20	1.20	5.00	4.25	1.90	*****	2.75	2.00	9.50	5.25	******	******	.75	Hupmobile 4 Cyl.
1.20	21.00	9.00	12.00	*****	30.00	1.90	1.90	11.00	8.00	2.25		4.50	2.00	12.00	4.00	4.20	******	1.20	Jewett 2 brake
1.20	21.00	9.00	12.00	*****	30.00	1.90	1.90	11.00	8.00	2.25	******	4.50	2.00	12.00	4.00	4.20	*****	1.20	Jewett 4 brake
1.75	18.00	*****		******		3.00	3.50	11.00	8.00	1.90	1.50	3.50	4.00	12.00	3.25	4.50	******	1.75	Jordan 6
1.75	26.00	10.00	16.00	18.00	20.00	3.50	3.50	14.00	9.50	2.00	1.50	4.00	4.00	12.00	4.00	6.00	*****	2.00	Jordan 8
F12	E1	E2	E3	E4	E5	E6	E7	E8	E9 .	E10	E11	E12	E13	E14	E15	E16	E17	E18	E19—Operation No.
1.50	18.00	8.00	10.00	22.00	42.00	1.60	3.10	17.00	13.50	2.50		7.00	6.75	26.50	11.00	7.00	*****	4.50	Lincoln
1.00	18.00	6.50	11.60	25.00	25.00	3.00	3.00	10.00	8.00	2.25	2.00	3.50	3.40	14.00	4.60	5.25	*****	1.50	7.40Marmon 74
1.56	12.75	5.25	7.50	24.00	24.00	1.90	1.90	7.50	6.00	1.20	1.00	3.00	1.50	8.00	4.00	3.00	******	1.20	Maxwell
*****	18.00	8.00	10.00	32.00	32.00	3.00	3.00	11.00	8.00	3.00	.75	3.50	3.00	11.75	5.75	1.75	******	.35	Nash
1.00	9.00	3.75	5.60	16.50	16.50	1.75	1.75	7.50	5.00	1.10	*****	3.00	2.00	8.00	4.00	2.25	******	.75	5.00Oakland 44-54
*****	6.00	3.00	3.00	33.00		.75	.75	6.25	4.90	1.50	.75	*****	1.25	7.00	3.20	5.25		1.50	Oldsmobile 6-30
	10.20	3.40	6.75	21.00	21.00	1.50	1.50	6.00	4.25	2.25		3.00	1.90	8.00	2.50	2.25	*****	1.50	Overland 4 to 92
6.00	22.50	9.00	13.50	16.50	16.50	3.75	3.75	12.00	9.75	3.75	1.05	3.60	5.25	12.00	3.00	5.25	*****	.90	Packard 0
6.00	22.50	9.00	13.50	16.50	16.50	3.75	3.75	15.00	12.25	3.75	1.05	3.60	5.90	14.25	4.00	6.75	*****	1.25	Packard 8
1.1	21.00	9.00	12.00	14.50	14.50	2.00	2.00	9.50	6.75	2.00	*****	4.50	1.75	10.50	4.25			2.25	Paige—10A Cont.
1.77	16.00	7.00	9.00	6.00	10.00	*****	*****	12.00	8.00	3.75		5.50	4.00	19.00	7.00	******		2.00	Peerless 8-Model 66
	. 15.00	6.00	9.00	******	*****	*****	4.00	12.00	9.75	3.75	1.25		3.75	15.75	5.00	*****	*****	1.40	Pierce Arrow 80
****	. 19.30	8.30	11.00	29.00	3.75	3.75	*****	8.00	6.00	3.35	*****	4.25	3.40	25.00	8.60	*****		1.20	9.90Reo T0
	. 19.30		11.00						7.00	2.30	*****	4.25	2.50	26.25	7.00	*****	*****	1.20	5.20
	21.00	9.00	12.00	31.00	31.00	3.00	3.00	9.00	7.00	1.50	1.50	4.25	2.75	10.50	4.50	3.00	-	1.50	Rick. 6—Early
1.0)	*****	*****	15.00	15.00	2.00	2.00	6.40	5.00	2.00	1.00	3.00	1.90	7.25	2.00	3.20		.80	Star 1925
2.0	18.00	7.00			16.00		3.00				1.40	3.75	2.40	16.00		18.00			
	. 16.00		9.00	30.00	30.00	3.00	3.00		7.75	4.00	1.40	3.75	2.00	16.00	4.00	18.00	12.00	1.50	Studebaker Light
1.2	21.00	9.00	12.00			5.75	5.75	8.00	6.50	1.50	*****	4.00	3.75	13.50	5.50	*****	******	.75	7.00Stutz 6-98
	0 13.50		8.50	24.00	24.00	2.75	2.75			.75	*****	3.25	2.25	9.00	3.50	4.50	******	1.50	4.50Velle 56 & 58
1 9	5 11.00	4.00	7.00		******	3.00	7.50	12.00	9.50	4.50		3.50	2.00						Willys K. 4
1.6																			

Operation F4 on Early Model Buick, \$3.50.

E19 on Reo includes bushing and labor only.

^{*}Operation F7 on Franklin does not include material.

Engine Operations

Continued

E20—Renew one cam follower and guide.

E21—Renew all followers and guides, valves out.

E22—Renew set piston rings & align rods.

rods. E23—Renew set rings after E8 and 9.

E24—Renew valve cover plate gaskets.

E25-Renew rings, one piston.

E26-Same as E25, after E9.

E27—Renew one piston & ring & pin after E9.

E28—Renew one p. pin after E9.

E29—Renew pin & bushings. One piston after E9.

E30—Renew all rings & pins after E9. E31—Inspect & adjust p. pin bushings, E3 incl.

E32—Ream bushing instl. ovsize pin. after rod R&R each.

E33—Overhaul cam followers, rockers, and tappets.

E34-Same as E33, after E14.

E35—Take up lower rod bearings.

E36-Take up rods, pan off.

E37—Take up blade rods only after E10.

(Rates listed are in dollars on the basis of labor charge at \$1.50 an hour.)

Some Suggested Prices for

MODEL								*											
Operation No E20	E21	E22	1023	E24	E25	E26	E27	E28	E29	E30	E31	1532	E33	E34	E35	E36	E37	E38	E3
Buick 4 1.90	5.50	8.00	1.90		2.50	.60	2.40		1.00	6.40		1.00	*****	*****	6.40	3.00	*****	9.70	4.10
Buick 6 1.90	8.15	11.75	2.90	*****	3.50	.60	2.40		1.00	9.60	*****	1.00	15.00	*****	8.25	5.00	*****	11.50	4.10
Cadillac 8, 59-61 2.20	6.40	13.60	8.00	*****	3.80	.75	2.75	1.00	2.00	15.00	*****	1.00	36.60	*****	5.00	3.00	2.60	9.40	5.20
Cadillac 8, 63 2.20		16.80	8.00	*****	5.40	.75	2.75	1.00				1.00	36.60		5.00	3.00		11.00	6.80
Chandler SS 3.50		14.00	4.50	.75	6.50	.75	3.00	.75	1.50	5.25		1.25	1.50		10.00	7.00		12.50	3.00
Chevrolet Sup	1.50	5.55	1.85	******	4.20	.45	1.25	1.25	******	3.75		.50	3.50	3.10	3.75	1.75	*****	5.75	1.78
Chrysler All 1.50		12.00	6.00	******	4.50	1.00	5.25	.75	*****	10.75			3.25	3.00		******	*****	******	2.78
Cleveland 43 3.00		13.00	4.50	.75	5.50	.75	3.00	.75	1.50	5.25		1.25	1.50		10.00	7.00		12.50	2.90
Dodge Bros. All 1.50		12.50	6.00	*****	7.90	1.20	3.00		1.20	6.00		1.20	8.00	7.00	7.50	5.00		13.00	
Durant A-22 1.90	4.00	8.30	4.80	*****	4.70	1.20	2.60	.80	*****	8.00		.80	9.20	******	7.50	4.00		10.00	2.56
Essex 4	*****	12.00	4.00	******	*****	1.00	3.00	1.00	******	7.00	*****	*****	9.00	*****	7.50	5.30	*****	11.00	4.50
Essex 6		10.00	6.00			1.00	3.00	1.00		10.50			9.00	*****	7.50	5.30		11.00	4.50
Ford T			3.00	.65	4.50	.75	1.50	.90	******	5.00		.90	******	*****	5.50	3.00	*****	7.00	1.50
Franklin 10C			21.75		6.50	3.45	7.40	1.55		31.05		1.55	*****		16.80	5.40		21.91	1.00
Ford 1 Ton Truck	8.50	6.75	3.00 4.50	.65	4.50	.75 1.00	1.50 2.75	.90	******	5.00 8.00	*****	.90	9.00	8.50	5.50 7.50	3.00 4.80	******	7.00 9.00	3.00
				******	******				******		*****	******					*****	3.00	
Hupmobile 4 Cyl 3.40		8.00	4.50	.75	3.25	1.05	3.40	1.20	******	7.50			17.00		3.50	1.50	*****	5.00	2.60
Jewett 2 brake 3.00		12.00	4.50	1.20	3.75	.75	2.75	.75	*****	9.00	******	.75	3.00	*****	7.00	5.50		11.00	4.00
Jewett 4 brake 3.00		12.00	4.50	1.50	3.75	.75	2.75	.75		9.00	******	.75	3.00	*****	7.00	5.50		11.00	3.40
Jordan 6 4.50		12.50	6.00	F.0	10.00	1.00	3.00	1.50		12.00			11.00		11.00	9.00		15.00	4.50
Jordan 8 4.50	4.00	18.50	8.50	.50	11.50	1.00	3.00	1.50	2.00	21.00	******	1.50	16.00	4.00	14.00	12.50	*****	18.00	4.50
Operation No.— E20	E21	E22	E23	E24	E25	E26	E27	E28	E29	E30	E31	E32	E33	E34	E35	E36	E37	E38	E39
Lincoln		14.00	5.00	*****	4.50	.50	2.40	.60		11.00		.95	37.00	*****	*****	*****	4.00	8.00	2.35
Marmon 74 2.00		18.00	9.00	*****	6.75	1.25	4.00	*****	******	10.25				13.50	*****	*****	*****	*****	2.50
Maxwell15.00	15.00		6.00	******	4.50	1.50	2.25	.75	******	6.00	*****			13.00	4.25	3.00	*****	7.20	2.25
Nash	******		6.75	1.50	8.00	1.30	4.00	1.50		12.00		1.50	2.50		12.00	9.00	*****	16.50	4.50
Onkland 44-54*0.75	*1.50	5.25	3.00	******	2.15	.50	1.00	.50	******	5.40	*****	.45	5.00	4.50	3.00	1.65	******	4.00	1.78
Oldsmobile 6-30 1.50	1.50	4.50	3.00	FA															0.00
				.50	3.00	.50	2.30	.50	1.25	7.50		.75	*****	******	6.50	4.50		7.75	2.00
Overland 4 to 9212.00		7.00	3.00	*****	6.00	.75	1.25	.50	*****	5.00		.50	14.00	13.00	4.50	4.50 2.25		6.00	2.25
Packard 6	*****	16.50	3.00 7.20		$6.00 \\ 7.20$.75 1.20	1.25 3.00	.50 1.50	6.00	$\begin{smallmatrix} 5.00\\ 12.00\end{smallmatrix}$			14.00	13.00	4.50 15.00	4.50 2.25 12.00	*****	$\begin{matrix} \textbf{6.00} \\ \textbf{17.50} \end{matrix}$	2.25 4.50
Packard 6	6.00	$\begin{array}{c} 16.50 \\ 20.00 \end{array}$	3.00 7.20 7.20	******	6.00 7.20 7.20	.75 1.20 1.20	1.25 3.00 3.00	.50 1.50 1.50	6.00 6.00	5.00 12.00 15.00	*****	.50	14.00	13.00	4.50 15.00 18.00	4.50 2.25 12.00 15.00	*****	6.00 17.50 20.50	2.25 4.50 4.50
Packard 6	6.00	16.50	3.00 7.20	*****	$6.00 \\ 7.20$.75 1.20	1.25 3.00	.50 1.50	6.00	$\begin{smallmatrix} 5.00\\ 12.00\end{smallmatrix}$	*****	.50	14.00	13.00	4.50 15.00	4.50 2.25 12.00	*****	$\begin{matrix} \textbf{6.00} \\ \textbf{17.50} \end{matrix}$	2.25 4.50
Packard 6	6.00 9.00	16.50 20.00 14.00	3.00 7.20 7.20	******	6.00 7.20 7.20	.75 1.20 1.20	1.25 3.00 3.00	.50 1.50 1.50	6.00	5.00 12.00 15.00	****** ******	.75	14.00	13.00	4.50 15.00 18.00	4.50 2.25 12.00 15.00		6.00 17.50 20.50	2.25 4.50 4.50 4.00
Packard 6	6.00 9.00	16.50 20.00 14.00 18.00 20.00	3.00 7.20 7.20 4.50 8.00 7.50	.75	6.00 7.20 7.20 4.00	.75 1.20 1.20 .75 1.00 1.50	1.25 3.00 3.00 2.75 2.60 3.10	.50 1.50 1.50 .75 1.00 1.59	6.00 6.00 2.00	5.00 12.00 15.00 9.00 16.00 13.00		.75	14.00	13.00	4.50 15.00 18.00 7.00 11.00 16.00	4.50 2.25 12.00 15.00 5.50 7.30 13.00	******	6.00 17.50 20.50 11.00 14.00 19.50	2.25 4.50 4.50 4.00 3.00 4.50
Packard 6	6.00 9.00	16.50 20.00 14.00 18.00 20.00	3.00 7.20 7.20 4.50	.75	6.00 7.20 7.20 4.00	.75 1.20 1.20 .75 1.00 1.50 1.00	1.25 3.00 3.00 2.75 2.60 3.10 8.95	.50 1.50 1.50 .75 1.00 1.59 1.75	6.00 6.00 2.00	5.00 12.00 15.00 9.00 16.00 13.00 12.00	 	.50 	36.00	13.00	4.50 15.00 18.00 7.00 11.00 16.00 15.15	4.50 2.25 12.00 15.00 5.50 7.30 13.00 12.15		6.00 17.50 20.50 11.00 14.00 19.50 24.75	2.25 4.50 4.50 4.00 3.00 4.50 16.50
Packard 6	6.00 9.00 10.90 38.00	16.50 20.00 14.00 18.00 20.00 15.00	8.00 7.20 4.50 8.00 7.50 6.00	.75	6.00 7.20 7.20 4.00 5.60 7.50	.75 1.20 1.20 .75 1.00 1.50 1.00	1.25 3.00 3.00 2.75 2.60 3.10 8.95 10.20	1.50 1.50 1.50 .75 1.00 1.59 1.75 1.95	6.00 6.00 2.00	5.00 12.00 15.00 9.00 16.00 13.00 12.00 8.00		.50 .75 1.00 1.00	36.00	13.00	4.50 15.00 18.00 7.00 11.00 16.00 15.15 7.00	4.50 2.25 12.00 15.00 5.50 7.30 13.00 12.15 5.50		6.00 17.50 20.50 11.00 14.00 19.50 24.75 29.00	2.25 4.50 4.50 4.00 4.50 16.50 23.00
Packard 6	6.00 9.00 10.90 38.00	16.50 20.00 14.00 18.00 20.00 15.00	3.00 7.20 7.20 4.50 8.00 7.50 6.00	.75	6.00 7.20 7.20 4.00 5.60 7.50	.75 1.20 1.20 .75 1.00 1.50 1.00 1.00 1.00	1.25 3.00 3.00 2.75 2.60 3.10 8.95 10.20 1.65	.50 1.50 1.50 .75 1.00 1.59 1.75 1.95 1.65	6.00 6.00 2.00	5.00 12.00 15.00 9.00 16.00 13.00 12.00 8.00 11.00	10.50	.50 	36.00	13.00	4.50 15.00 18.00 7.00 11.00 16.00 15.15 7.00 6.75	4.50 2.25 12.00 15.00 5.50 7.30 13.00 12.15 5.50 5.35		6.00 17.50 20.50 11.00 14.00 19.50 24.75 29.00 10.20	2.25 4.50 4.50 4.00 3.00 4.50 23.00 4.50
Packard 6	6.00 9.00 10.90 38.00	16.50 20.00 14.00 18.00 20.00 15.00	8.00 7.20 4.50 8.00 7.50 6.00	.75	6.00 7.20 7.20 4.00 5.60 7.50	.75 1.20 1.20 .75 1.00 1.50 1.00	1.25 3.00 3.00 2.75 2.60 3.10 8.95 10.20	1.50 1.50 1.50 .75 1.00 1.59 1.75 1.95	6.00 6.00 2.00	5.00 12.00 15.00 9.00 16.00 13.00 12.00 8.00		.50 	36.00	13.00	4.50 15.00 18.00 7.00 11.00 16.00 15.15 7.00	4.50 2.25 12.00 15.00 5.50 7.30 13.00 12.15 5.50		6.00 17.50 20.50 11.00 14.00 19.50 24.75 29.00	2.25 4.50 4.50 4.00 3.00 4.50 23.00 4.50
Packard 6	6.00 9.00 10.90 38.00	16.50 20.00 14.00 18.00 20.00 15.00	3.00 7.20 7.20 4.50 8.00 7.50 6.00	.75	6.00 7.20 7.20 4.00 5.60 7.50	.75 1.20 1.20 .75 1.00 1.50 1.00 1.00 1.00	1.25 3.00 3.00 2.75 2.60 3.10 8.95 10.20 1.65	.50 1.50 1.50 .75 1.00 1.59 1.75 1.95 1.65	2.00 1.65 1.00	5.00 12.00 15.00 9.00 16.00 13.00 12.00 8.00 11.00	10,50	.50 	36.00	13.00	4.50 15.00 18.00 7.00 11.00 16.00 15.15 7.00 6.75	4.50 2.25 12.00 15.00 5.50 7.30 13.00 12.15 5.50 5.35		6.00 17.50 20.50 11.00 14.00 19.50 24.75 29.00 10.20	2.25 4.50 4.00 3.00 4.50 23.00 4.50 2.10
Packard 6	6.00 9.00 10.90 38.00 16.00	16.50 20.00 14.00 18.00 20.00 15.00 12.50 9.40	3.00 7.20 7.20 4.50 8.00 7.50 6.00 3.50 3.00	.75	5.60 7.50 7.50 4.00 5.60 7.50 3.00 7.15	.75 1.20 1.20 .75 1.00 1.50 1.00 1.00 .60 .75	1.25 3.00 3.00 2.75 2.60 3.10 8.95 10.20 1.65 1.75	.50 1.50 1.50 .75 1.00 1.59 1.75 1.95 1.65	2.00 1.65 1.00	5.00 12.00 15.00 9.00 16.00 13.00 12.00 8.00 11.00 9.00	10,50	.50 .75 1.00 1.00 1.40 .75	36.00 36.00 16.00	13.00 4.50 15.00	4.50 15.00 18.00 7.00 11.00 16.00 15.15 7.00 6.75 8.80	4.50 2.25 12.00 15.00 5.50 7.30 13.00 12.15 5.50 5.35 3.40		6.00 17.50 20.50 11.00 14.00 19.50 24.75 29.00 10.20 9.70	2.25 4.50 4.50 4.00 3.00 4.50 23.00 4.50 2.10
Packard 6	6.00 9.00 10.90 38.00 16.00 7.00 11.00	16.50 20.00 14.00 18.00 20.00 15.00 12.50 9.40 12.00 12.00	3.00 7.20 7.20 4.50 8.00 7.50 6.00 3.50 3.00	.75	5.60 7.50 7.50 4.00 5.60 7.50 3.00 7.15	.75 1.20 1.20 .75 1.00 1.50 1.00 1.00 .60 .75	1.25 3.00 3.00 2.75 2.60 3.10 8.95 10.20 1.65 1.75	.50 1.50 1.50 .75 1.00 1.59 1.75 1.95 1.65 .75	2.00 	5.00 12.00 15.00 9.00 16.00 13.00 12.00 8.00 11.00 9.00	10,50	.50 	36.00 4.50 16.00	13.00 4.50 15.00	4.50 15.00 18.00 7.00 11.00 16.00 15.15 7.00 6.75 8.80	4.50 2.25 12.00 15.00 5.50 7.30 13.00 12.15 5.50 5.35 3.40		6.00 17.50 20.50 11.00 14.00 19.50 24.75 29.00 10.20 9.70	2.25 4.50 4.50 4.00 3.00 4.50 23.00 4.50 2.10 4.00 4.00
Packard 6	6.00 9.00 10.90 38.00 16.00 7.00 11.00 10.25 5.25	16.50 20.00 14.00 18.00 20.00 15.00 12.50 9.40 12.00 13.50 7.50	3.00 7.20 7.20 4.50 8.00 7.50 6.00 3.50 3.00 7.00	.75	5.60 7.50 4.00 5.60 7.50 3.00 7.15 4.50	.75 1.20 1.20 .75 1.00 1.50 1.00 1.00 .60 .75	1.25 3.00 3.00 2.75 2.60 3.10 8.95 10.20 1.65 1.75	1.50 1.50 1.50 .75 1.00 1.59 1.75 1.95 1.65 .75	2.00 	12.00 12.00 15.00 9.00 16.00 12.00 8.00 11.00 9.00 15.00 15.00	10.50	.50 	36.00 4.50 16.00	13.00 4.50 15.00	4.50 15.00 18.00 7.00 11.00 16.00 15.15 7.00 6.75 8.80 9.75 9.75	4.50 2.25 12.00 15.00 5.50 7.30 13.00 12.15 5.50 5.35 3.40 6.75 6.75		6.00 17.50 20.50 11.00 14.00 19.50 24.75 29.00 10.20 9.70 12.50 12.50 13.50 9.00	2.25 4.50 4.00 3.00 4.50 23.00 4.50 2.10 4.00 4.00 11.28 2.65
Packard 6	6.00 9.00 10.90 38.00 16.00 7.00 11.00 10.25 5.25	16.50 20.00 14.00 18.00 20.00 15.00 12.50 9.40 12.00 13.50	3.00 7.20 7.20 4.50 8.00 7.50 6.00 3.50 3.00 7.00 7.00	.75	5.60 7.50 4.00 5.60 7.50 3.00 7.15 4.50	.75 1.20 1.20 .75 1.00 1.50 1.00 1.00 .60 .75 1.20 1.20 1.20	1.25 3.00 3.00 2.75 2.60 3.10 8.95 10.20 1.65 1.75 3.80 2.75	1.50 1.50 1.50 .75 1.00 1.59 1.75 1.95 1.65 .75	2.00 1.65 1.00 2.50 2.50 1.50	12.00 12.00 15.00 9.00 16.00 12.00 8.00 11.00 9.00 15.00 15.00 10.00	10.50	.50 	36.00 4.50 16.00	4.50 15.00	4.50 15.00 18.00 7.00 11.00 16.00 15.15 7.00 6.75 8.80 9.75 9.75 8.25	4.50 2.25 12.00 15.00 5.50 7.30 13.00 12.15 5.50 5.35 3.40 6.75 6.75 6.00		17.50 20.50 11.00 14.00 19.50 24.75 29.00 10.20 9.70 12.50 13.50	2.25 4.50 4.00 3.00 4.50 23.00 4.50 2.10 4.00 4.00 11.28 2.65

Operation No. E20 on Oakland Models 34-6-44, inclusive, \$0.75.

Operation E21 on Oakland Models 36-44, inclusive, \$5.50.

Operation No. E49 on Oakland Models applies to 6-54 only, price on Model 6-44, \$14.50.

Operation No. E35 on Willys Knight Model 20 only. \$10.50.

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Definitions of Repair Operations

others. E39—Renew one rod bearing after E10

and E6.

E40—Renew all rod bearings after E45. E41-Mains and rods all, take up after pan and head R&R.

-Align all rod assbis, after rods R&R.

E43—Same as E42, one rod only.

E44-Renew all main bearings, E1 incl.

E45—Remove, dismantle, inspect and reinstall engine assbly.

E46—Same as E44 after E45.

E47-Renew front main only.

E48-Renew one main after E45.

E49—Renew shaft, use old bushings. E50—Same as E49 after E45.

E51-Renew one main bearing, after E10.

E52—Renew all mains interchangeable type after E10.

E53-Burn in all mains after aligning, engine brought in.

E54-Same as E53 plus rod bearings.

E55—Take out crankshaft end play.

E56—Renew one cyl. E58 incl.

E57-Renew all cyl. E59 incl.

E58-Fit piston assbly. cyl. out.

E59-Fit all pistons, cyl. out.

Engine

Operations

Continued

Operations Defined Above

(Franklin and Reo prices include labor and materials; others labor only.)

MODEL Operation No.	E59_	E58	E57	E56	1055	E54	E53	1952	E51	E50	E49	E48	E47	E46	E45	E44	E43	E42	E41	E40
		1.50	26.25	26.25				*****	*****	24.00	46 00	8 00	22.00	22.70	32.00					
Bulek 4		1.50		29.80	*****	******		******	******	32.00					30.00				8.75 10.50	13.40
Buick 6				24.00			*****	20.00			40.00					00.00	.40		13.20	
Cadillae 8, 65				28.00			******	20.00			20.00	******	*****	******	*****		.40		13.20	
Chandler S		1.75	25.00		******			20.00	0100	******	******	8.00		30.00	35.00	40.00			9.00	10.00
Chevrolet Sup		1.50		25.00		5.00	2.50	*****	*****		26.00		******	3.00		27.00			7.00	4.25
Chrysler Al	8.00	1.90	48.00	48.00	*****	509249	*****	******		10.00	*****	3.00	30.00	10.00	000000	33.00	.70	4.00	*****	7.00
Cleveland 4		1.60	18.00	*****	2.00	*****	*****	15.00	******		*****	******	*****	4.50	30.00	30.00	.75	3.50		10.00
Dodge Bros. Al		3.00	72.00	72.00	*****		*****	******		11.00	45.00	3.00	38.00	9.00	*****	44.00	.45	2.00	8.00	9.00
Durant A-2:		2.20	52.25	52.25	******		*****	*****	*****	6.00	33.50	5.00	32.50	15.00	27.50	42.50	.50		10.00	
Essex		2.50	23.25	23.25	*****	*****	******	*****		******	35.00	6.00	38.00	18.00	30.00	41.00	.50	1.90	17.00	9.00
Essex (10.50	2.75	60.00	60.00	******	******		*****	*****	*****	39.00	6.00	36.00	24.00	30.00	40.00	.50	2.75	16.25	13.50
Ford 7	4.00	1.20		14.00		5.50	3.50	*****	*****	******	*****	*****	******	*****	*****	20.00	.35	1.25	******	4.00
Franklin 100	44.40	7.40	173.72	30.084		*****		*****	*****	7.55	31.15	1	******	33.61	43.60	77.21	.40	2.25	10.15	17.76
Ford 1 Ton Truck		1.20		14.00		5.50	3.50	*****	******	*****	******	-	*****	*****	*****	20.00	.35	1.25	40000	4.00
Hudson	10.50	2.75	29.25	29.25	*****	*****	*****	*****	*****		50.00	10.00	54.00	46.50	36.00	60.00	.50	2.25	18.00	12.00
Hupmobile 4 Cyl			*****	*****	*****	******	*****	*****		******		11.00			25.00			1.50	6.00	5.50
Jewett 2 brake			59.00	59.00	******	*****	*****	*****	*****			10.00						2.25	11.25	15.00
Jewett 4 brake	11.50	2.30	59.00	*****	*****	*****		*****	*****			10.00	41.00	30.00	38.00	52.00	.50	2.25	11.25	15.00
Jordan (11.50	2.30	28.00	28.00	12.00	*****	******	*****	*****	*****	60.00		******		38.00			3.00	16.00	24.00
Jordan 8	24.00	3.00	35.00	35.00	*****	*****	*****	*****	*****	*****	75.00	7.50	81.00	50.00	55.00	105.00	.50	4.00	21.00	36.00
-Operation No.	E59-	E58	E57	E56	E55	E54	E53	E52	E51	E50	E49	E48	E47	E46	E45	E44	E43	E42	E41	E40
Lincoln		1.15		30.00		*****	*****			*****	42.00			20.00		45.00			17.50	
Marmon 7				20.00		******	*****	*****			******	40000			40.00			2.50		4.50
Maxwel		1.90	58.00	58.00	******		*****	******		12.00			7.50		20.00	36.00			5.60	7.00
Nasl			*****	******	*****	*****	*****	14.00		3.00	44.05		*****				1.00		18.00	
0akland 44-5	5.25	1.50	12.00	12.00	******	*****	*****	4.00	4.00	******	14.25	3.75	*****	3.00	26.00	*****	.35	1.75	5.20	9.00
Oldsmoblie 6-3		.75	******	33.00		*****		6.75	1.25			.75	7.50	******		10.50		5.25		
Overland 4 to 92		1.10		37.50		*****	*****	*****	*****	18.00	24.00			20.00		27.00		1.25		8.00
Packard				60.00	*****	*****	*****	*****	*****	*****	*****	00000	62.50			67.50			25.50	
Packard				68.50	*****	*****	*****	*****	******	*****	*****	012110	72.50			67.50			32.50	
Palge—10A Cont	12.00	2.40	25.25	25.25	*****	*****	*****	*****	*****	*****	*****	******	55.25	44444	36.00	60.00	.50	2.25	12.25	15.00
Peerless 8, Model 6				16.00		*****	*****	*****	*****	20.00	40.00		******		30.00				12.00	
Pierce Arrow 8				60.00		*****	*****	*****			*****	*****	63.00	*****		68.00			26.00	
Reo T			119.75	319.753	13.56	*****			*****	*****	*****	*****	*****	*****	30.00		.50		16.00	
Reo F & V Speed				75.551		*****	******	*****	*****	*****						85.25		2.00		76.55
Rick, 6—Earl;		1.40		56.00		*****	****	*****	*****		33.50				26.00				10.00	
Star 192	6.00	1.75	24.00	24.00	*****	*****	*****	*****	******	8.00	23.00	5.00	20.00	15.00	15.00	30.00	.45	1.50	4.80	6.00
Studebaker Big, Spec			45.00	45.00	9.00	*****	******	*****	00000	*****	60.00				36.00				13.00	
Studebaker Ligh	19.50	3.25	90.00	90.00	9.00		*****	******	******	******	60.00	8.50	60.00	32.00	36.00	67.00	.50	2.60	13.00	21.00
Studebaker Ligh		2.40			12.75		+0*100	*****	*****	*****		******	*****		******	70.00				30.00
Studebaker Ligh	*******		******	*****	12.10	000000							OF OO	00 00	00 00	40 00	A.F.			10 00
-		1.25		58.00		******	*****	*****		******	36.00		27.00							12.00
Stutz 6-9	7.00		58.00		4.50	******	*****	******	******	*****	36.00 47.50				20.00				6.00 10.75	

Operation No. E41 on Model 20 Willys Knight only, \$13.75.

Operations E56 and E57 on Franklin, include new piston, ring, and pin asemblies in addition to cylinders.

Operations E58 and E59 apply to the fitting of a new piston, pin, and rings.

Engine
Operations
Continued

E80—Hone or lap one cyl., remove not more than .004 and fit oversize pin & piston assbly.

E61-Same as E60 when cyl. is out.

E62—Renew crank case, upper half.
E63—Overhaul engine as follows: Regrind cyl., fit piston assblys., take up rods & mains, renew or ream valve guides, overhaul carb. and oilpump, clean and repaint, also incl. E14 and E73 and regrinding

E64—Overhaul same as E63 plus renew main and rod headings and fit to new or reground shaft, E65 not incl.

charge.

E65—True up crankshaft journals and pins, by regrinding when shaft is out.

E66—Overhaul same as E63 where cyls. are reamed, honed or bored.

E67-Stop oil leak, rear main bearing.

E68-Stop oil leak, F. end crankshaft.

E69—Retime valves and ignition.

E70—R&R engine front gear cover, E98 incl.

E71-Adjust front end chain.

E72—Renew front end chain, E70 incl.

E73-Renew chain after E70.

E74-Renew F. end gears after E70.

(Rates listed are in dollars on the basis of labor charge at \$1.50 an hour.)

Some Suggested Prices for

Challille S, 63.	6.50 6.50 00 43.00 00 43.00	*****	E74	E 73	E72	E71	E70	men	TOOR	TROP	****	W20 W	W30.4	T700	****	-		
Balek 6	6.50 00 43.00 00 43.00						23,0	1200	E	E04	E00	E69	E04	E03	E62	E61	E60	Operation No.—
Cardillac S, 59-61	00 43.00 00 43.00		7.20			*****	6.00	8.00		*****	60.00	18.00	100.50	69.00	57.00	5.00		Buick 4
Card	00 43.00	444444	7.20	*****	*****	******	6.00	8.00	******	******	73.00						*****	Buick 6
Charder SS.		5.00		5.00	13.00	.60	7.00	13.00	1	*****	*****					4.00	*****	Cadillac 8, 59-61
Chevrolet Sup. 6.75 3.00 50.00 56.00 18.00 35.00 4.00 2.25 2.0 2.00 2.00 Chryster All 9.25 5.00 6.80 75.00 26.00 61.00 6.25 3.25 6.00 2.75 7.50 7.50 Dodge Bros. All 4.75 70.00 102.00 18.00 52.00 9.00 7.50 12.00 2.70 55 2.50 2.80 Durant A-22 8.70 4.00 75.00 90.00 18.00 52.00 5.80 4.00 75.00 10.00 2.20 18.00 52.00 5.80 4.00 2.70 55 2.50 2.25 Essex 6 75.00 80.00 104.00 18.00 6.75 4.50 75 6.00 15.00 2.25 Ford T 5.40 2.50 42.00 50.00 30.00 5.00 35.00 5.00 35.00 75.00 15.00 2.25 Ford T 5.40 2.50 42.00 50.00 30.00 5.00 35.00 35.00 26.00 26.00 75.00 15.0	50 5.00	5.00	*****	5.00	13.00	.60	7.00	13.00	1	*****	*****					4.00	*****	Cadillae 8, 63
Chrysler All. 9.25 5.00 68.00 75.00 26.00 61.00 6.25 3.25 6.00 2.75 3.50 (Cleveland 43 7.50 4.50 35.00 75.00 83.00 18.00 1.50 3.00 50 50 75 7.50 7.50 Dodge Bros. All 4.75 70.00 102.00 18.00 62.00 9.00 7.50 1.20 2.70 6.5 2.50 20 Durant A-22 8.70 4.00 75.00 90.00 18.00 52.00 6.75 4.50 75 6.00 1.50 2.28 Essex 4 75.00 80.00 104.00 18.00 6.75 4.50 75 6.00 1.50 2.25 Essex 6 67.00 82.00 21.00 6.75 4.50 35.00 26.00 26.00 Franklin 10C 176.18 154.25 177.25 26.00 7.76 5.00 35.00 26.00 75 Frord T 176.18 154.25 177.25 26.00 7.76 5.00 35.00 26.00 75 Frord T 176.18 154.25 177.25 26.00 7.76 5.00 35.00 26.00 140.00		8.50	8.50	.75	*****	.50				*****					55.00			Chandler SS
Cleveland 43 7.50 4.50 35.00 75.00 83.00 18.00 1.50 3.00 5.00 7.50 1.20 7.5 7.50 7.50 7.50 Dodge Bros. All 4.75 70.00 102.00 18.00 62.00 3.00 7.55 1.20 2.70 65 2.50 104 104 104 104 104 104 104 104 104 10	4.20	******	2.00	*****	*****		2.25	4.00	*****	*****	35.00	18.00	56.00	50.00		3.00	6.75	Chevrolet Sup
Dodge Bros. All.	50 15.00						3.25											
Durant A-22																		
Essex 6	12.75				2.70					*****								
Essex 6																		
Ford T. 5.40 2.50 42.00 50.00 30.00 5.00 3.50 26.00 2.60 2.60 Franklin 10C 176.18 154.25 177.25 26.00 7.75 5.00 8.5 13.15 7.75 22.40 Franklin 10C 3.50 42.00 50.00 30.00 5.00 3.50 26.00 3.50 26.00 3.00 5.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 26.00 3.50 278.00 87.00 120.00 23.00 6.75 4.50 7.5 6.00 1.50 12.00 3.00 3.00 3.50 3.50 3.50 3.50 3.50 3	25 6.50	2.25	******	1.50	6.00	.75	4.50	6.75	******	******	*****	18.00	104.00	80.00	75.00	0.0000	******	Essex 4
Franklin 10C		2.25			6.00	.75				******					*****			
Ford 1 Ton Truck 5.40 2.50 42.00 50.00 30.00 5.00 3.50 26.00 Hudson 78.00 87.00 120.00 23.00 6.75 4.50 7.5 6.00 1.50 12.00 3.00 Hupmobile 4 Cyl. 6.00 4.50 70.00 105.00 18.00 62.00 7.00 2.00 6.40 4.25 5.0 6.00 1.75 Jewett 2 brake 9.00 5.00 74.00 110.00 21.00 7.00 5.00 7.50 1.50 4.00 3.00 Jewett 4 brake 9.00 5.00 70.00 107.00 21.00 4.00 4.50 5.0 1.90 Jordan 6 9.00 5.50 105.00 129.00 21.00 75 Jordan 8 10.00 5.50 105.00 18.00 186.10 28.00 12.00 10.50 7.5 12.50 1.50 4.50 Operation No. E60 E61 E62 E63 E64 E65 E66 E67 E68 E69 E70 E71 E72 E73 E74 E75 Lincoln 100.00 135.00 165.00 21.00 136.60 1.150 6.00 30 8.50 2.00 8.00 Maxwell 5.40 5.50 156.60 198.00 21.00 136.60 8.00 8.00 Maxwell 5.40 5.50 81.00 88.00 48.00 5.50 3.75 1.75																		
Hudson									*****									
Hupmobile 4 Cyl. 6.00 4.50 70.00 105.00 18.00 62.00 7.00 2.00 6.40 4.25 5.0 6.00 1.75 Jewett 2 brake 9.00 5.00 74.00 110.00 21.00 7.00 5.00 7.50 1.50 4.00 3.00 Jewett 4 brake 9.00 5.00 70.00 107.00 21.00 4.00 4.50 5.0 1.90 Jordan 6 9.00 5.50 105.00 129.00 21.00 75 12.50 1.50 4.50 Jordan 8 10.00 5.50 105.00 18.00 186.10 28.00 12.00 10.50 75 12.50 1.50 4.50 Jordan 8 10.00 5.50 105.00 18.00 186.10 28.00 12.00 10.50 75 12.50 1.50 4.50 Jordan 8 10.00 5.50 105.00 18.00 186.00 28.00 11.50 6.00 3.0 8.50 2.00 8.00 Marmon 74 12.00 5.50 156.60 198.00 21.00 136.60 11.50 6.00 3.0 8.50 2.00 8.00 Marmon 74 12.00 5.50 156.60 198.00 21.00 136.60 8.00 8.00 Marmon 74 12.00 5.50 156.60 198.00 21.00 120.00 7.50 5.00 2.50 175 175 188									*****									
Sewett 2 brake	00 16.00	3.00	12.00	1.50	6.00	.75	4.50	6.70	*****	*****		23.00	120.00	84.00	78.00	019019		Hudson
Jewett 4 brake						.50			2.00	7.00	62.00				*****			
Jordan 6			4.00				5.00	7.00		*****	*****							
Operation No. E60 E61 E62 E63 E64 E65 E66 E67 E68 E69 E70 E71 E72 E73 E74 E75	90 6.00	1.90	*****	.50	4.50		*****	*****	*****	*****	*****							
Operation No.— E60 E61 E62 E63 E64 E65 E66 E67 E68 E69 E70 E71 E72 E73 E74 E75 Lincoln 100.00 135.00 165.00 21.00 11.50 6.00 .30 8.50 2.00 8.00 Marmon 74 12.00 5.50 156.60 198.00 21.00 5.50 3.75 1.75 1.75 1 Nash 12.30 4.80 140.00 180.00 21.00 7.50 5.00 2.50 2.50 1 Oakland 44-54 5.00 1.50 74.00 79.00 19.00 65.00 4.00 2.50 4.0 3.40 .90 2.50 2.25 Oldsmobile 6-30 7.50 4.50 70.00 78.00 19.00 .75 4.50 3.00 1.50 Packard 4 to 22 50.00 72.00 16.00 41.00 2.25 4.95 .75 10.00 2.25			*****						******									
Lincoln	50 18.50 1	4.50	*****	1.50	12.50	.75	10.50	12.00	1	*****	*****	28.00	186.10	118.00	105.00	5.50	10.00	Jordan 8
Marmon 74 12.00 5.50 156.60 198.00 21.00 136.60 8.00 Maxwell 5.40 58.00 81.00 18.00 48.00 5.50 3.75 1.75 1 Nash 12.30 4.80 140.00 18.00 21.00 12.00 7.50 5.00 2.50 1 Oakland 44-54 5.00 1.50 74.00 79.00 19.00 65.00 4.00 2.50 40 3.40 .90 2.50 2.25 Oldsmobile 6-30 7.50 4.50 70.00 78.00 19.00 75 4.50 3.00 1.50 Overland 4 to 92 50.00 72.00 16.00 41.00 5.00 4.00 2.25 4.95 75 10.00 2.25 Packard 6 13.00 6.00 133.20 148.70 21.00 115.00 2.25 4.95 .75 10.00 2.25 3.60 <	75 E76	E75	E74	E73	E72	E71	E70	E69	E68	E67	E 66	E65	E64	E63	E62	E61	E60	Operation No
Maxwell 5.40 58.00 81.00 18.00 48.00 5.50 3.75 1.75 1 Nash 12.30 4.80 140.00 180.00 21.00 120.00 7.50 5.00 2.50 1 Oakland 44-54 5.00 1.50 74.00 79.00 19.00 65.00 4.00 2.50 .40 3.40 .90 2.50 2.25 Oldsmobile 6-30 7.50 4.50 70.00 78.00 19.00 .75 4.50 3.00	00	8.00	******	2.00	8.50	.30	6.00	11.50	1	*****	******	21.00	165.00	135.00	100.00			
Nash 12.30 4.80 140.00 180.00 21.00 120.00 7.50 5.00 2.50 2.50 2.50 2.50 2.50 2.50 2.25	7.25	*****	8.00	*****	*****	*****				******					*****		12.00	
Oakland 44-54 5.00 1.50 74.00 79.00 19.00 65.00 4.00 2.50 .40 3.40 .90 2.50 2.25 Oldsmobile 6-30 7.50 4.50 70.00 78.00 19.00 .75 4.50 3.00 1.50 3.60	15.00	*****	1.75	*****	*****	******			*****	*****	48.00				*****		*****	
Oldsmobile 6-30 7.50 4.50 70.00 78.00 19.00 .75 4.50 3.00									*****	*****					*****			
Overland 4 to 92 50.00 72.00 16.00 41.00 5.00 4.00 2.25 Packard 6 13.00 6.00 133.20 148.70 21.00 115.00 2.25 4.95 .75 10.00 2.25 3.60 Packard 8 13.00 6.00 155.25 171.90 24.00 13350	25 4.25	2.25	2.50	.90	3.40	.40	2.50	4.00	*****	*****	65.00	19.00	79.00	74.00	*****	1.50	5.00	Oakland 44-54
Packard 6	5.25	*****		*****		*****			.75	*****					******	4.50	7.50	
Packard 8 13.00 6.00 155.25 171.90 24.00 13350	8.25	*****	2.25						*****	*****					*****			
Paige—10A Cont. 5.75 88.00 112.00 23.00 7.50 5.00 4.00 4.50 .50 1.90 Peerless 8, 66. 8.00 3.00 120.00 158.00 18.00 15.00 10.00 4.00 Pierce Arrow 80. 6.00 140.00 180.00 25.00 14.00 12.00 13.00 13.00 1.00 4.00 Reo T6. 205.80 130.00 21.00 5.15 12.50 32.00 32.00 Reo F & V Speed 148.00 99.00 18.00 11.00 8.00 14.00 14.00 Rick. 6—Early 78.00 114.00 23.00 6.50 4.00 .75 5.25 1.50 9.75 4.00 50.00 <td>60 13.50</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4.95</td> <td>2.25</td> <td></td> <td>*****</td> <td></td> <td></td> <td></td> <td></td> <td>*****</td> <td></td> <td></td> <td></td>	60 13.50						4.95	2.25		*****					*****			
Peerless 8, 66 8.00 3.00 120.00 158.00 18.00 15.00 10.00 4.00 4.00 Plerce Arrow 80 6.00 140.00 180.00 25.00 14.00 12.00 13.00 13.00 1.00 4.00 Reo T6 205.80 130.00 21.00 5.15 12.50 32.00 32.00 14.00 Rice F & V Speed 148.00 99.00 18.00 11.00 8.00 14.00 14.00 Rick. 6—Early 78.00 114.00 23.00 6.50 4.00 .75 5.25 1.50 9.75 4.00 Star 1925 10.65 4.25 55.50 67.00 45.50 6.00 4.00 .50 4.40	60 14.60								*****						*****			
Pierce Arrow S0 6.00 140.00 180.00 25.00 14.00 12.00 13.00 13.00 13.00 1.00 4.00 Reo T6 205.80 130.00 21.00 5.15 12.50 32.00 Reo F & V Speed 148.00 99.00 18.00 11.00 8.00 14.00 Rick G—Early 78.00 114.00 23.00 6.50 4.00 .75 5.25 1.50 9.75 4.00 Star 1925 10.65 4.25 555.0 67.00 45.50 6.00 4.00 .50 4.40 .40 .90	90 6.00	1.90	*****	.50	4.50	4.00	5.00	7.50	*****	*****	*****	23.00	112.00	88.00	*****	5.75		raige—IOA Cont
Reo T6 205.80 130.00 21.00 5.15 12.50 32.00 Reo F & V Speed 148.00 99.00 18.00 11.00 8.00 140.00 Rick, 6—Early 78.00 114.00 23.00 6.50 4.00 .75 5.25 1.50 9.75 4.00 Star 1925 10.65 4.25 55.50 67.00 45.50 6.00 4.00 .50 4.40 .40 .90	***		4.00					15.00	1	*****	*****				*****		8.00	
Reo F & V Speed 148.00 99.00 18.00 11.00 8.00 11.00 8.00 140.00 140.00 11.00 14.00	00 14.50	4.00	*****	1.00	13.00	13.00	12.00			*****	*****				*****	6.00	*****	
Rick, 6—Early 78.00 114.00 23.00 6.50 4.00 .75 5.25 1.50 9.75 4.00 Star 1925 10.65 4.25 55.50 67.00 45.50 6.00 4.00 .50 4.40 .40 .90	8.00	*****	32.00	*****	*****	*****	*****	12.50	5.15	*****	*****			205.80		*****	*****	
Star 1925	6.00	*****	14.00		*****					*****	*****				148.00		*****	
			9.75							*****		23.00			*****			
Studebaker Rig. Sp. 10.00 5.50 90.00 88.00 124.00 23.00 9.75 7.50 2.00 4.50 2.50	90 4.40	.90	******	.40	4.40	.50	4.00	6.00	*****	*****	45.50	*****	67.00	55.50	*****	4.25	10.65	Star 1925
		3.50	4.50	2.00	*****	******	7.50	9.75	******	******	*****				90.00	5.50		Studebaker Big, Sp.
04 4 6 6W	50 13.50	3.50								*****	*****							
77.17. WO B WO	50 13.50 50 13.00			.75	12.00	12.00				*****					******			
Velie 56 & 58 88.00 130.00 23.00 102.00 5.00 3.00 3.00	50 13.50 50 13.00 00 14.25	4.00	0 00	*****	*****	*****				*****	102.00				*****			
Willys K. 4	50 13.50 50 13.00 00 14.25 4.50		3.00						1			18 00	70.00	*60.00			******	WHIYS K. 4
Operation No.— E60 E61 E62 E63 E64 E65 E66 E67 E68 E69 E70 E71 E72 E73 E74 E75	50 13.50 50 13.00 00 14.25			*****	*****	******	8.75	10.00	******	*****	4	10.00	10.00	00100				

E63 and E64 on Cadillac and Packard are based on exchange of old cylinder block for reground block from authorized service stations.

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Definitions of Repair Operations

E75-Renew chain and sprockets after E70.

E76-RAR cam or ecc. shaft.

E77-Adjust cam shaft end thrust after E170

E78-Renew front camshaft bearing after E70.

E79-Renew all cam shaft bearings after E76.

E80-Renew one inner sleeve.

ES1-Renew all inner sleeves.

ES2-Same as E80 rod out & cyl. off.

E83—Take up all sleeve rods.

E84—Same as E83, cyl. and pan off.

ES5-Renew or tighten one junk ring.

E86-R&R fly wheel assbly.

E87-R&R fly wheel after C2.

E88-R&R engine oil pump.

E89—Overhaul pump after E88.

E90-Adjust oil pressure.

E91-Renew fan bearings.

E92—Renew fan belt.

E93-Repack one water pump.

E94-R&R overhaul water pump.

E95-R&R exhaust manifold.

E96-R&R clean muffler.

E97-R&R only muffler.

E98-R&R radiator assbly.

E90—Renew core, E98 incl.

Engine **Operations**

Continued

Operations Defined Above

(Franklin and Reo prices include labor and materials; others labor only.)

-Operation No.	E99	E98	E97	E)96	E95	E94	E93	E92	E91	E90	E89	ESS	E87	E86	E85	E84	E83	E82	E81	E80
							1.00	- 10			1.00					-				
Bulek 4		2.15	1.70		*****	6.00	1.20	.40	1.90		1.00	3.25	*****	*****	*****	*****	*****	*****	*****	*****
Buick 6		2.15	1.70			6.00	1.20	.40	1.90		1.00	3.25	0.00	40.00	*****	G-0110	*****	*****	*****	*****
Cadillae 8, 59-61		4.60	2.40	9.00	2.40	7.00	3.40	0.4040	*****	1.00		2.80	3.00	10.80		90000	-	*****	*****	*****
Cadillae 63		4.60	2.40	9.00	2.40	7.00	3.40	1.05		1.00		2.80	3.00	10.80	******	*****	*****	*****	~~~~	52000
Chandler SS		1.50		3.25	2.00	3.00	.75	1.25	*****	4.00		3.50	EO	6 00	*****	*****	*****	*****	*****	
Chevrolet Sup	2.00	1.50	.70	2.10	.50	3.50	.50	.50	*****	*****	.50	.50	.50	6.00	******	*****	*****	*****	******	****
Chrysler All	3.75	1.90	1.20	3.25	3.75	3.40	.75	1.20	*****	1.90	.75	1.90	2.25	10.50	******	*****	*****	*****	*****	
Cleveland 43	2.25	1.50	1.50	2.25	1.80	3.00	.75	1.00	*****	3.75	.75	3.00	2.25	10.50	******	*****	*****	*****	******	*****
Dodge Bros. Al	3.25	2.25	1.90	3.90	1.50	8.25	1.50	.75	2.25	*****	1.50	6.00	15.00	21.00	*****	*****	*****	*****		****
Durant A-22	3.25	2.50	1.50	3.50	******	3.00	.40	.50	1.60	*****	.50	1.75	1.50	5.00	*****	*****	*****	*****		
Essex 4	3.40	2.25	1.90	3.90	2.25	******	*****	.75	******	******	.50	1.50	*****	*****	*****	*****	*****	*****	******	
Essex (3.40	2.25	1.90	3.90	2.25	******	*****	.75		******	.50	1.50	******		*****	*****	*****	*****	*****	****
Ford T	6.00	1.50	1.00	2.25	1.50	******	*****	.40	1.00	A		-	******	27.00	*****	*****	*****	******	*****	
Franklin 100		******	1.15	2.50	2.07	******		*****	******	******	******	4.40		*****	*****	*****	*****	*****		
Ford 1 Ton Truel		1.50	1.00	2.25	1.50		*****	.40	1.00	******	*****	******		27.00	******	*****	*****	******	*****	
Hudson	3.40	2.25	1.90	3.90	2.25	5.25	.75	.75	1.50	******	.50	1.50	*****	*****	*****	*****	*****	*****	*****	******
Hupmobile 4 Cyl	2.00	1.25	1.20	3.20	*****	******	******	.50	1.25	.50	.50	1.25	2.00	6.50		*****	*****	*****	0+2+++	******
Jewett 2 brake	3.00	1.50	1.50	3.00	2.00	8.00	2.25	.50	2.25	.50	.75	3.75	3.00	10.25	*****	*****	*****	*****	*****	940000
Jewett 4 brake	3.00	1.50	1.50	3.00	2.00	8.00	2.25	.50	2.25	.75	.75	3.75	3.00	8.00	*****	******	*****	*****	*****	*****
Jordan		2.50	2.00	******	*****	3.25	.50	1.00	1.50	.50	1.00	3.00	1.25	*****	******	*****		******	*****	
Jordan	3.25	2.50	2.00	*****	*****	3.25	.50	1.00	1.50	.50	1.00	3.00	1.25		*****	******	*****	*****	*****	021000
-Operation No.	E99	E98	E97	E96	E95	E94	E93	E92	E91	E90	E89	E88	E87	E86	E85	E84	E83	E82	E81	E80
Lineoh	7.00	4.50	2.50	5.00	2.00	7.50	5.00	1.00	*****	.50	1.00	*****	*****	15.00		*****	*****	*****	*****	******
Marmon 7	5.00	3.00	2.00	4.00	2.20	6.50	1.40	.50	3.00	*****	1.50	4.00		*****	*****	*****	*****	*****	*****	-
Maxwel	3.00	1.20	1.20	3.00	2.70	*****	*****	.60	1.50	******	.75	.75	2.00	6.00	*****	****	*****	*****	*****	******
Nasl	.75	2.00	2.25	3.50	1.00	3.00	2.25	.75	2.20		1.50	5.50	1.50	7.50			*****	*****	******	
Oakland 44-5	1.50	1.15	.75	2.25	2.00	2.00	1.25	.50		.30	.50	1.80	1.00	3.50	*****	*****	*****	*****	*****	******
Oldsmobile 6-3	2.75	2.00	.75	2.25	4.50	2.25	.75	*****	2.25	*****	******	2.25	2.25	9.00	*****	*****	******	*****	******	******
Overland 4 to 9	3.00	1.50	1.50	3.00	1.50	******	******	.75	1.50	*****	******	*****	3.50	10.50	*****	*****	*****	******	*****	******
Packard	3.75	2.70		7.50	3.75	5.40	.75	1.20	******	1.50	1.50	5.50	2.50	25.00		*****	*****	*****	******	
Packard	3.75	2.70	*****	7.50	3.75	5.40	.75	1.20		1.50	1.50	5.50	2.50	38.00	*****	*****		*****	******	******
Paige—10A Cont	3.00	1.50	2.00	3.25	2.00	8.00	2.25	.40	2.00	.75	1.00	2.00	1.50	6.00		*****	,	*****	*****	******
Peerless 8, 6	2.50	1.50	1.20	2.50	*****	5.40	3.60	.40	3.00	.40	.60	1.50	2.00	9.00	******	*****	*****	*****	*****	******
Plerce Arrow 8	4.25	3.00	4.50	7.00	4.00	6.00	.80	1.00	2.50	1.25	1.50	6.00	3.00	*****	*****	*****	****	*****	*****	*****
Reo T	3.75	3.20	1.25	3.20	4.35	*****	1.70	3.15	4.50	.80	*****	2.00	******			******	*****	******	******	******
Reo F & V Spee	3.75	3.20	1.25	3.20	3.80	*****	2.25	1.40	4.50	.80	*****	*****	*****	*****	******	******	*****	*****	*****	-
Rick. 6-Earl	3.00	2.00	1.50	4.00	3.00	2.25	1.25	.75	2.00	*****	1.00	3.50	3.00	9.00		******		*****	*****	*****
Star 192	2.80	2.00	*****	#####O	*****	1.80	.60	.40	1.20	3.00	.50	1.50	1.00	5.00	*****	*****	******	*****	******	*****
Studebaker Big Spec	5.50	4.50	2.25	4.00		5.00	1.50	.50	3.00		.75	3.00	1.50	9.00	*****	*****	*****	*****	*****	None
	5.50	4.50	2.25	4.00	*****	6.75	1.50	.50	. 3.00		.75	4.50	1.50	9.00	*****	*****	*****	*****	******	*****
Stutz 6-9	5.25	4.20	1.90	3.90	2.25	5.25	3.75	.40	1.50	.50	1.50	1.50	2.25	7.50	*****	*****	*****	******		*****
Velie 56 & 5	2.25	1.20	1.50	3.00	2.25	******	******	.40	. 1.50		1.25	*****	2.25	6.75	*****	*****	*****	*****	*****	*****
	2 25	1.50	3.00	5.00	3.00	******	******	.80	1.50		1.00	4.50	3.50	15.00	3.75	5.00	18.00	3.00	15.00	2.00
Willys K.	4.40	2.00	0.00	0.00	9.00	******														-

Operations E63 and E64 on Willys Knight 4 do not include regrinding. (Note: Main bearing renewal prices on Chandler, Chrysler, Cleveland, Jordan, Oldsmobile, Packard and Pierce-Arrow based on align reaming.)

Engine

Fenders

Frame

Sheet Metal

Springs

E100-Renew all water hose.

E101—Renew lower radiator hose, only.

E102—Renew cyl. top hose only.

E103-Renew oil pressure gage.

E104—Clean all engine oil lines.

E105—Take up all bearings, renew pins and rings and timing chain or

FENDERS, FRAME, SHEET METAL PARTS . AND BODY (Operations Prefixed "Z")

Z1-Renew front fender.

Z2-Renew rear fender, regular.

Z3-Renew R fender, special body.

Z4-Renew one running board.

Z5-Recover one running board.

Z6-Renew run. board & splasher (1).

Z7-Renew splasher only.

Z8-Renew board, splasher and fenders, one side.

Z9-Renew one frame side rail.

Z10-Renew frame assbly.

Z11-Renew front tubular member.

Z12-Renew rear tubular member.

Z13-Tighten all body bolts.

Z14-Renew one door striker.

Z15-R&R body.

(Rates listed are in dollars on the basis of labor charge at \$1.50 an hour.)

Some Suggested Prices for

Chrysler All																					
Bulck 4																					
Halek 6	Operation 1	No.—E100	E101	E102	E103	E104	E105	Z1	7.2	Z 3	Z 4	Z5	Z6	Z7	Z 8	Z9	Z10	Z11	Z12	Z 13	ZI
Caduline S, 50-61	Bulck 4	1.90		.60		3.15	24.40	2.60	2.60	*****	4.00	1.40	10.00	8.60	11.20	95.00	85.00	*****	*****	1.45	.5
Caddline S, 50-61	Buick 6	1.90	.75		.75	4.25	30.15	2.60	2.60	*****	4.00	1.40	10.00	8.60	11.20	95.00	85.00	*****	******	1.45	.5
Charneller SS.	Cadillac 8, 59-61	2.60	.80	.60	1.20	7.60	37.40	4.40	4.40	*****	3.60	3.20		9.00	16.40	******	*******	*****	******	*****	.4
Cheyslet Sup.	Cadillae 8, 63	2.60	.80	.60	1.20	7.60	37.40	4.40	4.40	*****	3.60	3.20	12.00	9.00	16.40	******	******	******	*****	1.60	.4
Chrysler All	Chandler SS	1.50	.75											5.75	11.00	55.00	75.00	*****	6.00	1.25	.5
Cleveland 43	Chevrolet Sup	1.50	.50	.50	.30	2.25	17.00	1.50	1.20	1.75	1.20	*****	2.05	1.50	5.70	21.75	27.75	******	*****	.75	.3
Dodge Bros. All	Chrysler All	1.20	.50				******									*******	67.50	Time	*****	.75	.4
Durant A-22										2.50						40.00	65.00	******	*****	1.00	.5
Essex 4						2.25							4.50	1.50	9.00	******	64.50	*****	******	.75	
Easex 6	Durant A-22	1.20	.40							4.00	2.00	*****	5.00	3.00	9.00	*******	*******	*****		.60	.40
Ford T. 2.00 30 4.00 18.00 15.0 1.25 1.50 3.50 2.00 4.50 24.00 30.00 9.00 10.00 Franklin 10C 76.24 29.38 29.20 13.40 24.77 11.37 80.53 38.00 3.00 76.24 29.38 29.20 13.40 24.77 11.37 80.53 38.00 3.00 50.00 18.00 18.00 24.77 11.37 80.53 38.00	Essex 4	2.25	*****	.75	.75	1.50	29.25	2.70	3.00	*****	2.25	2.25	5.70	4.00	11.00	*******	52.50	******	6.00	.75	*****
Ford T. 2.00	Essex 6	2.25		.75	.75	1.50	30.00	2.70	1.50		2.25	2.25	5.70	4.00	11.00		52.50		*****	.75	
Franklin 19C.				.30		4.00	18.00	1.50	1.25	*****	1.50	*****	3.50	2.00	4.50	24.00	30.00	9.00			
Hudmon	Franklin 10C			******	*****		76.24	29.38	29.20				24.77	11.37	80.53	*******	*******				*****
Hughon	Ford 1 Ton Truck	2.00	*****	.30	*****	4.00	18.00	******	*****		******	******	*****	*****	*****	*******		******	*****	******	
Severt 2 brake 5.00 60 .40 .75 2.25 3.00 3.00 2.25 3.00 3.75 2.70				.50	.75	1.50	32.00	3.00	3.00	*****	2.25	2.25	5.70	4.00	13.00	*******		*****	6.00	.75	****
	Hupmobile 4 Cyl	1.00	.50	.50	.50	1.50	25.00	2.25	1.90	3.50	2.60	3.25	*****			*******	40.00	******	*****	.50	.50
	Jewett 2 brake	5.00	.60	.40	.75	2.25	30.00	3.00	2.25	3.00	3.75	2,70	******	*****	9.00	*******	Time	*****		4.50	.40
Operation No.—E100 E101 E102 E103 E104 E105 Z1 Z2 Z3 Z4 Z5 Z6 Z7 Z8 Z9 Z10 Z11 Z12	Jewett 4 brake	3.00	1.20	.40	.75	2.25	26.00	3.00	2.25	3.00	3.75	2.70	4.50	3.60	11.00	*******	*******	******	*****		*****
Comparison No. E100 E101 E102 E103 E104 E105 Z1 Z2 Z3 Z4 Z5 Z6 Z7 Z8 Z9 Z10 Z11 Z12 Z12 Z12 Z12 Z12 Z12 Z12 Z13 Z14 Z15 Z1	Jordan 6	1.50	.50	.40	1.25	*****	20.00	3.75	3.00	*****	3.50	*****	******	*****	13.00	*******	*******	*****	*****	1.50	
Lincoln	Jordan 8		.50	.30	1.25	*****	51.00	5.25	3.75	******	3.00		14.00	*****	15.00	*******		4.50			*****
Marmon 74 1.50 1.00 50 5.00 58.00 6.00 4.00 8.00 4.00 13.00 68.00 Maxwell .75 .40 40 .75 1.90 20.00 3.00 2.75 1.20 2.25 4.50 6.75 67.50 18.00 Nash 1.50 1.00 .50 .75 4.50 5.00 2.25 3.25 7.00 3.75 11.00 57.00 3.60 6.00 Oakland 44-54 1.50 .50 .50 .50 .225 20.00 2.25 3.25 7.00 3.75 11.00 57.00 3.60 6.00 Obserland 4 1.50 .50 .50 .50 18.00 3.00 3.00 3.00 3.00 8.00 8.00 8.00 7.00 40.00 <td>Operation 1</td> <td>No.—E100</td> <td>E101</td> <td>E102</td> <td>E103</td> <td>E104</td> <td>E105</td> <td>Z1</td> <td>Z2</td> <td>Z3</td> <td>Z4</td> <td>Z5</td> <td>Z6</td> <td>Z7</td> <td>Z8</td> <td>Z9</td> <td>Z10</td> <td>Z11</td> <td>Z12</td> <td>Z13</td> <td>Z14</td>	Operation 1	No.—E100	E101	E102	E103	E104	E105	Z1	Z 2	Z 3	Z4	Z 5	Z6	Z7	Z 8	Z9	Z10	Z11	Z 12	Z 13	Z14
Maxwell					.75											******		******	******	1.50	
Nash										*****				4.00	13.00	******	68.00	*****	*****	1.00	
Oakland 44-54 1.50 50 .75 .50 2.25 2.00 2.25 2.25 1.00 3.00 3.00 3.00 8.00 26.00							20.00			*****		2.25				******	67.50	18.00	*****	.75	.40
Oldsmobile 6-30										*****						*******	57.00	3.60	6.00	.60	
Overland 4 to 92 1.90 1.20 .75	Oakland 44-54	1.50	.50	.75	.50	2.25	20.00	2.25	2.25	*****	2.25	1.00	3.00	3.00	8.00	*******	26.00	*****	*****	.75	.40
Packard 6 1.50 .75 .75 .75 4.00 42.10 6.00 3.20 4.50 6.00 6.00 13.75 135.00 Packard 8 1.50 .75 .75 .400 42.10 6.00 3.20 4.50 6.00 6.00 13.75 135.00 Paige—10A Cont 3.50 1.50 .75 .75 30.75 3.00 2.25 3.75 2.70 6.00 4.50 10.50					.50											******		*****			
Packard 8 1.50 .75 .75 .400 42.10 6.00 3.20 4.50 6.00 6.00 6.00 6.00 13.75 135.00										******							Time	*****			
Page—10A Cont. 3.50 1.50 .75 .75 .30.75 3.00 2.25 3.75 2.70 6.00 4.50 10.50										*****							******	*****			
Peerless 8, 63										*****						135.00	*******	*****			
Pierce Arrow 80 1.50 .75 .75 .75 5.00 46.00 6.00 3.50 4.75 7.00 6.00 6.00 15.00 Time	l'aige-10A Cont	3.50	1.50	.75	.75	*****	30.75	3.00	2.25	******	3.75	2.70	6,00.	4.50	10.50	*******	*******	******	*****	4.50	.50
Pierce Arrow 80 1.50 .75 .75 .50 46.00 6.00 3.50 4.75 7.00 6.00 15.00 Time 3.15 Reo T6 4.25 1.50 1.50 18.80 14.50 10.80 155.50 <td< td=""><td>Peerless 8, 63</td><td> 3.00</td><td>1.20</td><td>.45</td><td>.60</td><td>5.00</td><td>50.00</td><td>3.75</td><td>3.75</td><td></td><td>1.75</td><td>3.25</td><td>8.00</td><td>7.00</td><td>14.50</td><td>Time</td><td>Time</td><td>******</td><td>*****</td><td>1.50</td><td>.75</td></td<>	Peerless 8, 63	3.00	1.20	.45	.60	5.00	50.00	3.75	3.75		1.75	3.25	8.00	7.00	14.50	Time	Time	******	*****	1.50	.75
Reo F & V Speed. 3.70 1.50				.75	.75	5.00	46.00	6.00	3.50	******	4.75	7.00		6.00	15.00	Time		3.15			
Riek. 6—Early 1.75 1.25 .50 1.20 4.50 29.00 4.50 3.00	Reo T6	4.25		1.50		*****	*******	18.80	14.50		10.80			*****	*****	•••••	155.50	*****	*****	1.50	
Rick. 6—Early 1.75 1.25 .50 1.20 4.50 29.00 4.50 3.00						*****	*****	20.30	15.65		9.05	*****	*****	*****			155.50		*****	1.50	*****
Studebaker Big, Spec. 2.25 1.50 .75 2.00 22.60 2.50 2.00												3.75		7.00	13.00		90.00				
Studebaker Light 2.25 1.50 .75 .75	Star 1925		.40	.50	.75	2.00	22.60	2.50	2.00	*****	2.00	*****	3.00	2.00	7.50	Time	Time	Time	*****	.75	.60
Stutz 6-95 2.25 .75 .50 .75 3.75 30.00 3.75 4.50 4.50 3.00 1.90 10.50 9.75 20.00 Time Time Velie 56 & 58 1.00 .50 .75 4.00 29.00 3.00 1.50 2.00 3.00 5.00 7.50 6.00 11.50 Time Time						*****	44.00	4.50	3.00	*****	3.00	5.25	8.50	7.50	14.50	Time	Time	*****	*****	1.50	
Velle 56 & 58 1.0050 .75 4.00 29.00 3.00 1.50 2.00 3.00 5.00 7.50 6.00 11.50 Time Time Time							42.00	4.50	3.00		3.00	5.25	8.50	7.50	14.50	Time	Time	*****			
							30.00	3.75	4.50	4.50	3.00	1.90	10.50	9.75	20.00	Time	Time	******		1.25	1.20
Willys K. 4 1.5075 .75 6.00 *30.00 3.00 3.00 3.00 3.00 7.50 6.00 12.25 Time Time								3.00		2.00	3.00	5.00	7.50	6.00	11.50	Time	Time	*****			.50
	Willys K. 4	1.50	*****	.75	.75	6.00	•30.00	3.00	3.00	******	3.00	3.00	7.50	6.00	12.25	Time	Time	*****	*****	1.25	.70
Operation No.—E100 E101 E102 E103 E104 E105 Z1 Z2 Z3 Z4 Z5 Z6 Z7 Z8 Z9 Z10 Z11 Z12	Operation 1	Vo.—E100	E101	E102	E103	E104	E105	Z 1	7.2	Z 3	Z 4	25	Z 8	27	Z 8	Z9	Z10	Z11	Z12	Z 13	Z14

4

0

0

0

14

10

10

-75

60

70

Definitions of Repair Operations

Z16-Renew front door glass.

Z17-Renew rear side glass.

Z18-Renew upper or lower w. shield glass, closed.

Z19-Same as Z18, open body.

Z20-Adjust door striker plate.

Z21-R&R w. shield assbly., open.

Z22-R&R or renew tire carrier.

SPRINGS AND BOLTS (Operations Prefixed "S")

S1-R&R or renew front spring.

S2-Renew front spring F. boit and bushing.

S3-R&R and rebush front spring.

S4-Renew front spring center bolt.

S5-Renew all spring and bracket bolts and bushings.

S6-R&R or renew one rear spring.

S7-R&R & rebush rear spring.

88-Renew R. spring R. bolt and bushing.

88-Renew rear spring center bolt.

S10-Renew all rear spring shackles.

S11-Rebush one F. spring R. bracket.

S12-Tighten all spring clips.

Engine

Fenders

Frame

Sheet Metal

Springs

Operations Defined Above

(Franklin and Reo prices include labor and materials; others labor only)

S12 —Operation No.	S11 S1	10 811	9 S	8 80	S7 S	86	S5	54	S3	52	81	Z22	Z21	Z20	Z19	Z18	Z17	Z16	Z15
.90 Bulck		.20 3.10				3.60	22.50			1.30	3.10	3.60		.25	3.00	4.00	3.00	3.00	28.00
.90 Buick	3.10 .9	.20 3.10	30 11	50 5.30		4.55	24.00			1.30	3.10		2.50	.25	3.00	4.00	3.00	3.00	9.00
1.50Cadillae 8, 59-6		*****	*** *	****		4.20	20.00			1.20	3.20		1.75	*****	3.00	3.00	*****	3.00	
1.50Cadillac 8, 6:				****		4.20	20.00			1.20	3.20		1.75	*****	3.00	3.00	*****	3.00	
1.00Chandler S		.75		50 2.75		2.75	17.00		3.50	1.50	2.25		1.50	.50	3.00	4.00	3.00	3.00	4.00
.75 Chevrolet Sup	7	*****	75 .	00 .75	3.0	1.85	*******	.75	******	*****	1.10	1.00	1.20	.30	1.50	1.50	3.00	*****	7.50
1.50Chrysler Al		.75			4.00 1.2	2.25	17.00		3.00		1.50		1.20	.30	1.20	1.20	3.00	3.00	7.00
.75 Cleveland 4				20 2.25		2.75	12.00			1.20	2.25	.75	1.50	.50	3.00	3.00	3.00	3.00	2.00
1.50Dodge Bros. Al		.25 3.40		50 1.90		3.00	13.70			1.90	2.25	*****	2.25	.30	1.90	1.90	1.90	1.90	7.00
1.00Durant A-2		1.00		2.60		2.60	14.00		3.25		1.75		2.00	.30	2.75	3.00	*****	3.00	******
.75Essex 4	2.00 .7	.00 2.00	75 2	75 2.75	3.40 .1	2.75	10.75	1.75	3.50	1.00	2.25	*****	3.00	.30	*****	*****	******	3.00	1.00
.75Essex (.00 2.00		75 2.75		2.75	9.00	1.75		1.00	2.25	*****	3.00	.30	*****	*****	*****	3.00	21.00
1.20Ford 7	1.2	.25	50 2	3.50	4.00	3.00	*****	2.00	3.00	*****	2.00	*****	2.00	******	1.50	2.00	2.00	2.00	1.00
1.80Franklin 100	1.70 1.8	1.70			******	31.91	*****	*****	5.08	2.90	31.91		*****	*****	*****	*****	*****	*****	10000000
Ford 1 Ton Truel	*****	.00	00 3	3.00	7.00	4.00	******	2.00	3.00	*****	2.00	******	*****	*****	*****	****	*****	******	
.75 Hudson	2.00 .7	.00 2.00	75 2	75 2.75	3.40 .	2.75	14.50	1.75	3.50	1.00	2.25	*****	3.00	.30	*****	*****	******	3.00	21.00
1.00Hupmobile 4 Cyl				20 1.20		1.90	13.60			1.20	1.90		1.50	.40	3.00	3.00	3.00	3.00	28.00
1.25Jewett 2 brak		3.00		00 3.75		4.50	22.50			4.50	3.00		4.00	.30	3.00	3.00	5.00	4.50	20.00
Jewett 4 brak				00 3.75		4.50	21.00			4.50	3.00		3.00	.30	3.00	3.00	5.00	4.50	0.00
2.00Jordan		.00		50 2.75		2.75	15.00			2.00	2.25	1.00		*****	1.50	2.00	2.00	2.00	4.00
2.00Jordan 8	2.0	3.50	75 8	.00 2.75	4.50 2.	3.00	15.00	1.50	4.00	2.00	2.50	1.00	1.25	*****	1.50	2.00	2.00	2.00	10.00
S12 —Operation No.	S11 S	10 511	9 S	88 89	S7 S	86	85	S4	53	82	S1	Z22	Z21	Z20	Z19	Z18	217	Z16	Z 15
Lincoln				.00		5.00	*******	4.50	*****	******	4.25	2.50	5.50	1.50	*****	*****	*****	*****	
Marmon 7	1 50 15			20 1.90		1.50	14.00	4.50	2.25	.75	1.20	1.25	1.20	9.0	1.05	1.05	0.00	0.00	22.00
1.50 Maxwel		.75 1.50		20 1.90 00 3.75		3.50	20.00			2.00	3.15		2.40	.30	1.25	1.25	3.00	3.00	27.00
1.50		.00 1.40		20 1.80		1.50	12.50			1.00	1.50	2.25		.75	1.20 2.75	2.75	9.00	0.75	18.75
.60Oakland 44-54														.30	2.10	2.75	3.00	2.75	8.75
.75 Oldsmobile 6-30		.25 1.25		2.25		2.25	2.25	2.00	2.25		2.25	1.50		*****	*****	*****	*****	*****	6.00
1.50Overland 4 to 92				50 .75		2.25	9.00			1.00	2.50		1.90	.30	1.50	2.00	3.00	3.00	18.00
1.50Packard (.00 2.25		50 3.75		3.00	12.50			1.50	3.00	*****	*****	.30	3.75	5.50	*3.75		
1.50Packard		.00 2.25		50 3.75		3.00	12.50		3.60		3.00	******	*****	.30	3.75	5.50	3.75	3.75	30.00
1.25Paige—10A Cont	3.00 1.2	3.00	75 .	00 3.75	6.50 3.0	4.50	22.50	2.25	4.50	4.50	3.00	1.00	3.75	.40	3.00	3.25	3.50	3.00	28.00
1.00Peerless 8, 66				65 2.60		4.05	20.00	1.90		1.60	3.75	1.25	3.75	.30	2.75	3.00	3.00	3.00	30.00
Pierce Arrow 8						4	*******	0.50	******	0.50	10.05	******			*****		*****	*****	
1.50 Reo To		.70 5.80		90 4.00		15.00		3.50	*****	3.50	10.35		3.75	.30	******	9.70	*****	*****	24.00
1.50Reo F & V speed		.70 5.80		90 4.00		15.00		3.50		3.50	10.35		3.75	.39				******	24.00
1.25		$0.00 \ 2.00$ $0.50 \ 1.20$		50 2.00 .75 2.00		2.25	16.00 11.00		3.00 2.50	1.50	1.50 1.25		3.00	1.20	3.25	4.00 3.00	3.50 2.50	2.00	9.00
1.25Studebaker Big, Spec			_			4.50	20.00			1.75	3.00		4.50						15.00
														.50	2.25	2.75	3.00	3.00	
	1.2	.00		00 4.50		4.50 3.75	20.00		4.50		3.00		4.50	.50	2.25	2.75	3.00	3.00	15.00
1.25Studebaker Ligh		E0 0 00			42. 1212 1.	3.10					3.00		1.90	.40	1.50	1.50	4.00	3.50	28.00
1.25Studebaker Ligh .75Stutz 6-9	2.00 .7	.50 2.00		50 2.25		9 72	21 00				2 00								
1.25	2.00 .7 1.00 1.5	.00 1.00	75 2	00 3.75	5.00 2.	3.75	21.00			1.50	3.00	1.50		.30	1.50	1.50	3.25	3.25	
1.25Studebaker Light Stutz 6-98	2.00 .7 1.00 1.5		75 2		5.00 2.	3.75 3.00	21.00 20.00		4.50		3.00		3.00	.30	3.00	3.00	3.25	3.25	27.00

On Packard 6 Operations Z16 and Z17 apply to Model 116 only.

Springs

513-Rebush R. Spring F. bracket.

S14-Renew front spring clip.

S15-Tighten all clips, bolts and shackles.

Steering System S16-Adjust all shackles for side play.

S17-R&R and clean one shackle bolt.

S18-Same as S17 bolt broken. Transmission

one anddle.

Clutch

S19—Eliminate side and vertical play,

\$20-Remove S. saddle side play only (1).

STEERING SYSTEM (Operations Prefixed "SS")

SS1-Adjust gear at housing only.

SS2-Free up and grease steering system.

SS3-Tighten all steering connections.

SS4-Overhaul steering gear, lower portion.

885-Renew half nuts.

SS6-Renew half nuts after SS13.

SS7-Renew S. arm drag link ball.

SSS-R&R hand wheel.

SS9-R&R and overhaul drag link.

SS10-Renew worm and wheel.

(Rates listed are in dollars on the basis of labor charge of \$1.50 an hour)

Some Suggested Prices for

MODEL															000	220	0040	0044	-
Operation No.— S13	514	S15	S16	S17	S18	S19	S20	551	552	SS3	884	885	SSG	557	558	SSD	8810	8811	SS12
Buick 4	.60	2.25	1.20	.85	1.45	9.00	3.75	.90	3.90	3.00	8.50	5.30	2.40	1.00	1.70	1.50	*****	3.00	3.3
Buick 6	.60	2.25	1.20	.85	1.45	9.00	3.75	.90	3.90		8.50	5.30	2.40	1.00	1.70	1.50	*****	3.00	3.3
Cadillae 8, 59-61	1.00	4.80	2.75	1.40	1.75	******	*****	1.60	4.00		28.00	*****		1.50	7.00		26.00	1.60	****
Cadillac 8, 63	1.00	4.80	2.75	1.40	1.75	******	*****	1.60	4.00		28.00	*****		1.50	7.00		26.00	1.60	*****
Chandler SS	.75	1.75	1.00	.75	1.50		*****	.75		1.50	8.00	*****		.75	1.50	.75	6.00	.75	1.50
Chevrolet Sup	.60	.75	*****	*****	*****	3.00	.20	******	2.50	2.00	4.50	*****	******	.50	.59	.60	1.50	*****	.76
Chrysler All 1.20	.75	2.25	1.50	1.20	2.50	*****	*****	.50	1.50		6.00	5.25	1.00	1.50	2.75	1.50	5.25	1.50	2.25
Cleveland 43	.50	1.50	.90	.75	1.20	******		.50		1.00	6.00	*****		.75	1.50	.75	5.25	.75	1.50
Dodge Bros. All 1.50	.75	1.75	1.40	1.20	2.50	2.25	1.00	.50	2.25		7.50	*****	*****	1.00	1.50	2.75	7.50	1.50	2.25
Durant A22	.60	3.00	2.00	.50	1.50	*****	*****	.50		2.00	9.25	*****	*****	1.00	******	2.00	6.80	1.50	6.46
Essex 4 1.75	.75	1.75	1.25	.75	1.00	*****	*****	.50	2.00	2.00	6.00			1.50	1.90	3.75	3.50	*****	3.00
Essex 6 1.75	.75	1.75	1.25	.75	1.00	******		.50	2.00	2.00	4.50			1.50	1.20	3.75	3.50	******	1.90
Ford T	.50	1.50	*****					******	1.00	3.00	7.00	*****	*****		.75	******	*****	1.00	* * ****
Franklin 10C	1.16	2.20	1.53	1.32	*****	******	*****	3.08	2.00	4.00	*****		*****	.95	1.10	*****	20.24	1.40	****
Ford 1 Ton Truck	.50	1.50		*****	*****	*****	*****	*****	1.00	3.00	7.00	*****	*****	*****	.75		******	1.00	****
Hudson 1.50	.75	1.75	1.20	.75	1.00	*****	*****	.50	2.00	2.00	6.00	*****	******	1.00	1.90	3.75	3.50	2.25	3.00
Hupmobile 4 Cyl 1.50	.75	2.00	1.00	.50	1.20	******		*****	******	2.50	5.00	3.00	*****	.75	1.20	*****		******	2.00
Jewett 2 Brake 1.50	.75	2.40	1.20	.75	1.50	*****	******	1.20	3.00	3.50	5.25	3.00	******	1.00	2.25	2.25	3.75	1.20	2.28
Jewett 4 Brake 1.50	.75	2.40	1.20	.75	1.50	******		1.20	3.00	3.50	5.25	3.00	*****	1.00	2.25	2.25	3.75	1.20	2.28
Jordan 6	.50	1.75	1.50	.75	.75	******	*****	.50	1.25	2.25	12.00	******	*****	1.00	1.00	1.50	8.25	1.25	1.50
Jordan 8	.50	4.00	1.50	.75	.75	*****		1.00	1.25	2.25	8.25	*****	*****	1.00	1.00	1.50	8.25	1.25	1.50
Operation No.— \$13	S14	S15	S16	S17	S18	S19	S20	SS1	SS2	SS3	884	SS5	886	SS7	SS8	559	8810	SS11	SS12
Lincoln 2.00	.75	4.25	3.00	1.00	2.00			.75	2.00			*****	*****	1.50	*****	*****	*****	*****	****
Marmon 74	.75	2.70	*****	*****	*****	*****	*****	*****	3.00	3.75	15.00	*****	*****	1.50	*****	3.75	*****	1.50	8.50
Maxwell 1.25	.75	2.25	1.50	1.00	2.00	*****		*****	1.50	1.50	6.00	*****		1.00	.75	1.50	3.75	1.20	2.00
Nash	.50	3.00	*****	1.95	*****	*****	*****	.75	*****	2.25	6.00		*****	1.25	2.25	1.25	6.00	.75	3.00
Oakland 44-54 1.20	.50	2.40	1.50	.75	1.50	*****		.30	1.50	2.00	4.50	3.00	*****	.75	2.15	1.00	*****	.75	2.00
Oldsmobile 6-30 1.50	.50	1.25	.50	.50	.75	******		.50	.50	.75	6.00	8.75	.75	******	1.25	1.50	6.00		6.00
Overland 4 to 92	1.90	*****	*****	.75	1.50	*****	*****	.30	3.00	1.50	4.50		-	1.20	*****	1.50	3.75	.75	*****
Packard 6 3.00	1.50	3.75	3.25	1.20	2.25	*****	*****	3.75	2.80	2.25	14.00	1.50	.40	******	1.50	*****	12.00	1.50	*****
Packard 8 3.00	1.50	3.75	*****	*****	*****	*****	*****		*****		*****	******	*****	******	*****	*****	*****	*****	*****
Paige 10A Cont. 1.50	.75	2.40	1.20	.75	1.50	*****	*****	1.20	3.00	2.25	5.25	3.00	.40	*****	1.50	2.00	5.00	1.20	2.25
Peerless 8, 66	.75	4.25	3.00	1.20	2.10	*****	******	1.05	4.00	2.75	18.00	******		1.20	1.50	2.40	17.00	1.20	4.00
Pierce Arrow 80	******	*****	*****	*****	*****		*****	*****	*****	*****	*****		*****	*****	*****	******	******	*****	****
Reo T6 6.30		3.00	1.50	1.00	1.80	*****	******	*****	3.00	2.00	*****		*****	*****	1.00	4.00	7.80	.90	12.20
Reo F & V speed 6.30	*****	3.00	1.50	1.00	1.80	******	*****	******	3.00	2.00	*****	******		*****	1.00	4.00	6.80	.90	
	.60	3.25	1.50	1.20	2.50	*****		.75	3.50	4.50	10.50	*****	*****		3.00	2.00	*****	1.90	6.00
Rick. 6 Early 1.50		4 00	.75	.60	1.25	*****	*****	.50	3.00	1.50	5.00		******	.75	*****	1.50	4.60	1.50	1.50
Star 1925 1.50	.50	1.30																	
Star 1925				1.50	2.50			1.25	3.50	3.00	10.50			1.20	1.50	2.40	9.50	1.50	*****
Studebaker Big, Spec	.75	3.50	2.25	1.50	2.50 2.50	******	******	1.25			10.50 10.50	*****		1.20	1.50	2.40	9.50	1.50 1.50	
Studebaker Big, Spec Studebaker Light	.75 .75	3.50 3.50	2.25 2.25	1.50	2.50	*****	*****	1.25	3.50	3.00	10.50	*****		1.20	1.50	2.40	9.50	1.50	*****
Studebaker Blg, Spec Studebaker Light	.75	3.50 3.50 4.50	2.25 2.25 3.25	1.50 1.20	2.50 3.00	*****	*****	1.25 .75	3.50 4.00	3.00 3.00	$10.50 \\ 10.20$	*****	*****	$1.20 \\ 1.00$	1.50	2.40 2.00	9.50 9.00	1.50 1.50	
Studebaker Big, Spec Studebaker Light	.75 .75 .75	3.50 3.50 4.50 3.25	2.25 2.25 3.25 1.50	1.50 1.20 1.20	2.50 3.00 2.50	•••••	******	1.25 .75 .75	3.50 4.00 3.25	3.00 3.00 2.20	10.50 10.20 8.00	*****	*****	1.20 1.00 1.00	1.50 1.50	2.40	9.50 9.00 7.25	1.50 1.50 .75	*3.0
Star 1925	.75 .75	3.50 3.50 4.50	2.25 2.25 3.25	1.50 1.20	2.50 3.00	*****	*****	1.25 .75	3.50 4.00 3.25	3.00 3.00	10.50 10.20 8.00	*****	*****	$1.20 \\ 1.00$	1.50	2.40 2.00	9.50 9.00	1.50 1.50	*3.0

Definitions of Repair Operations

SS11-R&R pitman ball arm.

SS12-Renew post jacket tube bushings.

SS13-R&R only steering gear assbly.

TRANSMISSION (Operations Prefixed "T")

T1-Renew cover gasket.

T2-R&R dismantle and reassemble.

T4-Renew spdmtr. driving gear.

T5-Renew main shaft.

T6-Renew sliding 2nd genr.

T7-Recondition all but case.

T8-R&R only trans.

T9-Renew one shifter fork.

T10-Recondition all but case, after T8.

T11-Remove main shaft end play.

CLUTCH ASSEMBLY

(Operations Prefixed "C & TO")

C1—Adjust clutch pedal. C2—R&R clutch assbly.

C3-Renew dises.

TC4-Renew discs after C2.

C5-Reline discs after C2.

C6-Wash out and adjust clutch.

C7-Renew release bearing.

C8-Renew release after C2.

Springs

Steering System

Transmission

Clutch

Operations Defined Above

(Franklin and Reo prices include labor and materials; others labor only)

R MAKE AND MODEL	CAR																			
ion No.	C8 —Operation	C7	C6	C5 ·	TC4	C3	C2	C1	T11	T10	T9	T 8	T7	Te	Т5	T4	Т3	T2	T1	513
Bulck	.75	7.00	1.50	5.15	3.10	8.65	6.95	.75	1.50	6.50	5.50	6.95	11.00	8.00	8.00	6.60	11.30	7.50	.75	3.00
Bulek (7.00	1.50	5.15	3.10	8.65	6.95	.75	1.50	6.50	5.50	6.95	11.00	8.00	8.00	6.60	11.30	7.50	.75	3.00
Cadillac 8, 59-61	1.00Cad	10.25	2.20	4.80		14.00	9.20	.60	*****	5.25	*****	9.20	14.60	*****	*****	2.80	18.40	*****	.80	******
Cadilae 8, 63	1.00	10.25	2.20	4.80	*****	14.00	9.20	.60	*****	5.25	*****	9.20	14.60		******	2.80	18.40		.80	
Chandler S	.75	7.00	.75		.50	7.00	7.00	.75	.75	4.00	1.50	7.00	16.00	3.75	4.25	*****	8.00	8.00	.75	7.00
Chevrolet Sup	.25 C	1.00	.75	******	*****	******	5.25	*****	*****	8.00	1.20	3.50	6.00	5.50	5.50	******	6.00	4.50	.60	2.25
Chrysler All	1.50	*****	2.00	******	2.50	*****	5.25	1.20	*****		2.25	5.25	9.00	5.25	5.25	2.75	9.00	7.00	*****	2.50
Cleveland 43	.75	6.75	.75	.50	.50	6.75	6.00	.75	.75		1.50	6.00	8.00	3.00	3.75	*****	6.00	6.00	.75	6.00
	1.25Dod		2.25	*****	1.50	10.50		1.50	******		4.50	9.00	14.00		9.00			10.75		
	1.25	1.60	2.00	*****	1.00	5.00	2.50	1.50			1.40	5.00	8.40	8.00	8.40	5.00	8.00	8.00	.80	4.00
Essex	.75	6.00	1.50	*****	1.59	10.00	5.25	.75	9.75	9.75	1.50	5.25	15.00	*****	*****	*****	15.00	7.00	*****	2.25
Essex		6.00	1.50	*****	1.50	8.50	5.25	.75	8.25	9.00		4.50	12.00		*****	*****	12.00		*****	2.25
	1.00	9.00	******	*****	*****	******	******	.75	******	3.00		8.00	22.00		22.50	*****	*****	18.00		2.00
	6.75		1.75	*****	3.60	9.40	5.80	1.25	6.72		*****	5.12	******	19.33		11.92				
rd 1 Ten Truel		9.00	******	*****	4.70			.75		3.00		8.00	22.00		22.50			18.00		2.00
Hudso	.75	6.00	1.50	*****	1.50	10.00	5.25	.75	9.75	9.75	******	5.25	15.00	44224	*****	******	15.00	7.00	1.50	2.25
upmobile 4 Cyl	*3.00Hup	7.50	1.50	*****	1.90	6.50	4.50	.40	*****	3.50	1.30	4.40	8.25	5.70	5.70	2.25	8.00	7.00	1.20	2.25
Jewett 2 Brak	.75Je	4.00	1.50	1.00	1.25	4.50	4.25	.50	3.50	2.20		4.25	6.00	4.00	4.00	*****	6.00	5.00	1.20	2.40
Jewett 4 Brak		4.00	1.50	1.00	1.25	4.50	4.25	.50	3.50	2.20	2.00	4.25	6.00	4.00	4.00	*****	6.00	5.00	1.20	
Jordan		*****			*****	*****		1.25	*****		*****	6.00	16.00		6.00	2.25	10.00			9.50
Jordan	1.50	9.00	2.25	******	******	8.25	8.25	.50	*****	4.00	*****	7.75	16.00	6.00	6.00	2.25	10.00	*****	1.25	4.00
ion No.	C8 —Operation	C7	C6	C5	TC4	C3	C2	C1	T11	T10	T9	T 8	T7	T 6	T 5	T4	T 3	T2	T1	8513
Lincoh		12.00	*****	*** •	*****	******	*****	*****	*****	*****	*****	-	*****	12.00	******	******	******	18.00	*****	*****
Marmon 7				*****		*****		1.00								*****				
Maxwel		4.25	1.50	*****	1.25	0.00	3.75	1.20	3.50		1.50	3.75	9.00	3.75	3.75		9.00	5.00	1.50	
	1.50	7.00	1.25	*****	.50	6.00	5.50	.75	3.00	7.00		5.00		12.00		9.00	12.00			
Oakland 44-5		5.25	1.50	000000	1.25	5.00	3.75	.75	3.00	8.25	1.50	3.75	7.00	2.00	2.00	******	7.00	5.25	.70	2.25
Oldsmobile 6-3		6.75	*****	1.50	*****	7.50	6.75	.50	*****	*****		5.25		7.50	6.00	5.50		10.50		
Overland 4 to 9		6.75	1.50		1.00	6.75	6.00	.75	6.00	3.00		6.00	9.00	6.75	6.00	4.50	9.00	8.00	.75	2.75
Packard		*****	1.50	*****	8.00	14.25	11.25	.75	6.00	2.25	1.50	11.25	13.50	6.00	6.00	*****	*****	14.00		
Paige 10A Cont		4.50	1.50	******	.75	4.50	4.25	.50	3.50	2.20	2.00	4.25	6.50	3.50	3.50	******	6.20	5.00	1.20	
Peerless 8, 6		9.80	1.50	******	1.20	9.25	8.00	.60	1.00	9.00		8.00	16.50					11.00		
Pierce Arrow 8		3.00	1.00		1.20	0.20	0.00	.00	1.00		2.10	0,00	10.00	******		******	13.00		1.20	******
Reo T		11.35	1.50	******	17.00	22.00	5.50	1.00	3.40	92.00		6.00	99.00	29.95	21.30		39.50	11.00	1.75	6.00
eo F & V Spee	Reo	11.35	1.50	*****	17.00	22.00	5.50	1.00	3.40	92.00	******	6.00	99.00	29.95	21.30	*****	39.50	11.00	1.75	6.00
Rick. 6 Earl		6.00	1.50	*****	1.25	8.00	6.75	.75	3.50	3.00	2.00	6.75	9.75	*****	******	*****	9.75	8.75	1.25	7.50
Star 192	***************************************	1.40	1.50	******	1.20	4.20	3.00	*****	7.00	*****	1.80	*****	8.60	7.00	7.00	*****	7.00	7.00	1.00	2.20
baker Big, Spe	.75Studeba	6.00	1.50	*****	1.60	7.50	6.00	1.00	*****	9.00	3.00	4.50	14.00	7.50	7.50	*****	14.00	9.00	******	6.00
udebaker Ligh	.75 Stud	6.00	1.50	*****	1.60	7.50	6.00	1.00	*****	9.00	3.00	4.50	14.00	7.50	7.50	******	14.00	9.00	******	6.00
Stutz 6-9	1.25	7.20	2.50	******	.60	5.60	5.00	1.90	4.20	7.00	2.80	5.00	12.00	3.00	4.25	4.25	9.00	6.50	1.20	
Velle 56 & 5	1.00	5.00	1.50	*****	2.00	8.25	4.50	.50	6.75	4.00	1.75	4.50	7.75	6.75	6.75	*****	7.00	6.75	1.20	
Willys K.	1.00	9.00	1.50	*****	2.00	9.00	7.50	.75	******	4.75	2.25	*7.50	*12.00	4.50	3.75	*****	12.00	10.50	.75	4.50

C9—Renew clutch gear assbly.

C10-R&R and recondition clutch.

Clutch C11—Recondition clutch and trans.

C12—Renew one clutch spring.

Electrical C13—Renew shifter release yoke.

C14-Reline Ford bands, starter, open.

C15—Reline bands, starter, closed.

Lubrication C16-Reline bands, no starter.

C17—Treat slipping clutch.

C18-Reline cone clutch, C2 incl.

ELECTRICAL

(Operations Prefixed "G")

G1-Clean and adj. interrupter points.

G2-Clean and adj. spark plugs.

G3-Retime ign, and synchronize.

G4-G1, G2, G3, combined.

G5-Adj. gen. charging rate.

G6-Renew all primary wiring.

G7-Renew generator brushes.

G8—Renew starter brushes.

G9-Renew motor-generator brushes.

(Rates listed are in dollars on the basis of labor charge at \$1.50 an hour)

Some Suggested Prices for

CAR MAKE AND MODEL																			
Operation No.—	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	G1	G2	G3	G4	G5	G6	G7	G8	G9
Buick 4		12.00		*****	*****	000000	*****	*****	1.75			.60	.95	2.25	.75	******	*****	*****	4.50
Buick 6		12.00		*****	******	*****		*****	1.75	******	1.20	.80	.95	2.25	.75		*****	*****	4.50
Cadillae 8, 59-61		14.00			11.00	*****	*****		******	*****		1.00	1.00	2.35	.75	******	2.40	*****	*****
Cadillae 8, 63		14.00			11.00	*****	*****	******	*****			1.00	1.00	2.35	.75		2.40		*****
Chandler SSChevrolet Sup			6.00 4.25	6.00	4.50	******	******	*****	.75	6.50	.75 1.50	.75	.75 .60	1.50 1.00	.50	2.25 2.25	2.00 2.25	1.70	******
Chrysler All	7.50	8.25	7.00	6.00	.75		*****	******	1.50	*****	.75	1.20	.30	2.00	.40	*****	2.25	1.50	
Cleveland 43	4.50	7.50	6.00	6.00	4.50	******			.75	-	.75	.75	.75	1.50	.50	2.25	2.00	1.00	**
Dodge Bros. All	7.50	11.00	5.00	10.50	4.50	******	*****	*****	2.25	11.25	.75	.50	.75	1.50	.75	*****	*****	*****	3.00
Durant A-22	8.00	8.75	5.25		*****		*****		1.50	*****	.60	.75	1.00	1.75	.60	5.00	1.20	4.20	
Essex 4	12.50	10.50	11.50	*****	*****	******	******	*****	1.50	******	1.25	.60	1.25	2.00	.75	4.50	*****	*****	*****
Essex 6			7.50				******		1.50		1.25	.80	1.25	2.00	.75	4.50	*****	*****	
Ford T		21.00	6.00	8.50	8.50	3.75	4.75	3.00	******	*****		.30	.30	1.25	.30	*****			
Franklin 10C				9.85	0.50				1.90	******		1.50	1.00	2.25		******	*****	*****	*****
Ford 1 Ton Truck			6.00	8.50	8.50	3.75	4.75	3.00			1.00	.30	.30	1.25	.30	4.50	-		
Hudson	12.50	10.50	10.50	*****	6.00	******	*****	******	1.50	******	1.25	.80	1.25	2.00	.75	4.50	******	******	*****
Hupmobile 4 Cyl			7.50	*****		*****	*****	*****	1.50		1.20	.60	1.20	2.00	.60		2.45	******	*****
Jewett 2 brake			5.00	*****	1.50	*****	*****	*****	1.50		.75	.80	.75	1.50	.75	6.50	3.75	3.75	
Jewett 4 brake			5.00	*****	1.50	*****	******		1.50		.75	.80	.75	1.50	.75	6.50	3.75	3.75	*****
Jordan 8		14.00	9,25	0 50	1.25	******	*****	*****	-	******	1 00	1.00	1.00	0.00	1.00	10.00	3.75	4.00	*****
			9,25	8.50		******	******	******	010000	******	1.00	1.00	1.00	2.00	.75	12.00	2.50	2.25	*****
Operation No.—	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	G1	G2	G3	G4	G5	G6	G7	G8	GØ
Lincoln			*****	*****	*****	*****	*****		2.00	*****	1.25	1.30	2.00	4.00	1.50	*****	*****	******	20000
Marmon 74		0.00		1.00		*****	*****		1.00	*****	.50	.75		4.00	.50	-	2.25	1.50	*****
Maxwell			7.50	1.20	5.25	******	*****	*****	1.60	*****	.40	1.00	.75	1.70	.40	*****	3.75	2.25	
Nash Oakland 44-54		11.00	5.50 3.75	8.00	7.00 3.00		******	*****	1.25	4.00	.50	.75	.75	1.40	.50	*****	2.25	2.25	*****
			3.10	******	3.00	******	*****	*****	1.20	4.00	.50	.80	.50	1.20	.50	*****	******	******	*****
Oldsmobile 6-30				6.75	4.50	******	******	*****		*****	.75	.75	.50	1.25	.50	*****	*****		*****
Overland 4 to 92			6.00	6.00	*****		*****		1.00	*****	.50	.50	.50	1.00	.60	5.00	2.25	3.75	0.000
Packard 6			000000	*****		******	*****	*****	*****		1.00	1.50	2.00		1.50		5.10	4.50	******
Packard 8Paige—10A Cont			5.00	******	1.50	******	******	******	1.50	******	1.20 .75	1.50	2.25	1.50	1.50	3.75 6.50	5.10 3.75	4.50 3.75	*****
				0.50															
Peerless 8, 66				8.50	*****	*****	*****	******	2.35	*****	.80	1.00	.80	2.00		Time	4.00	3.60	*****
Pierce Arrow 80			*****	*****	*****	*****	******		0.05	*****	0.00	1.00	0.00		1.00	*****	******	*****	*****
Reo F & V Speed			******	*****	*****	*****	******	******	2.25		2.00	1.20	2.00	3.85	1.20			*****	*****
Rick. 6—Early			5.00	*****	*****	*****		******	2.25 1.50		.75	1.20 .80	2.00	3.85	1.20	7.00		*****	*****
Star 1925				******	******	******	******	******	1.00	******	.60	.40	.60	1.00	.60	7.00	4.60	3.20	*****
Studebaker Big, Spec	7.50	0.00	11.00	7 50	2.00				0.05	20.0	1 50	9.0	1 50	0.05	0.0		0.00		
Studebaker Light			11.00 11.00	7.50	3.00	*****		*****	2.25	9.00		.80	1.50	2.25	.60	******	3.00	3.00	*****
Stutz 6-95			10.50	7.50 6.00	3.00 8.25	*****	*****	******	2.25 1.50	9.00	1.20	1.00	1.50 1.20	2.25 2.50	.60	*****	3.00	3.00	*****
Velie 56 & 58			7.50	0.00	6.00	******	******		1.50	*****	.75	1.50	.75	2.00	.50	******	.75	1.50	*****
				*****	0.00				1.00	*****		1.00	.10	2.00	-				0.000
Willys K. 4	7.50	12.00	9.00	9.00	.75	*****	*****	*****	1.50		.75	.60	1.20	1.90		*****	3.00	3.00	****
Operation No.—			9.00 C11	9.00 C12	.75	C14	C15	C16	1.50 C17	C18	.75 G1	.60 G2	1.20 G3	1.90 G4	G5	G6	3.00 G7	3.00 G8	G9

Definitions of Repair Operations

G10—R&R generator.
G11—R&R starter.
G12—R&R motor generator.
G13—R&R starter switch assembly.
G14—Tighten bat. connections, all.
G15—R&R ign. and light switch.
G16—Focus headlamp buibs.
G17—Renew one headlamp lens.

LUBRICATION
(Operations Prefixed "L")

L1—Grease all pressure fittings. L2—Grease all G cups. L3-Lubricate all oil cups and pressure fittings.

L4-Lubricate springs, penetrating oil.

L5-Drain, wash out and refill trans.

L6-Drain, wash out and refill diff.

L7-Drain engine, refill fresh oil.

L8-Spread and grease springs.

MISCELLANEOUS
(Operations Prefixed "M")

M1-Adjust all shock absorbers.

M2—Renew or repair spdmter. flex. shaft.

Clutch

Electrical

Lubrication

Operations Defined Above

(Franklin and Reo prices include labor and materials; others labor only)

2 —Operation No.	M2 -	M1	LS	L7	L6	L5	L4	L3	L2	L1	G17	G16	G15	G14	G13	G12	G11	G10
Bulck	0.0000000	2.00	******	.50	1.00	.50	*****	2.00	******	1.50	.45	.75	1.45	.30	******	*****	*****	******
Buick	*******	2.00	*****	.50	1.00	.50	*****	2.00	*****	1.50	.45	.75	1.45	.30	*****	******	*****	
0Cadillae 8, 59-6		1.00	5.75	.60	1.00	1.00	.80	2.40	*****	1.40	.80	1.00	1.40	.80	400000	******	*****	
0Cadillac 8, 6	1.60	1.00	5.75	.60	1.00	1.00	.80	2.40		1.40	.80	1.00	1.40	.80	*****	*****	*****	****
75 Chandler S		1.50	3.50	*****	.75	.75	.75	2.25	1.50	1.50	.50	.50	1.50	.75	.75	*****	.75	.50
75Chevrolet Su	.75	1.00	1.50	.30	.30	.30	.30	2.25	*****	2.00	.30	.40	.75	******	.90	*****	.90	.50
Chrysler A	******	.75	*****	.40	.75	.75	.50	2.25	*****	1.50	.40	.40	1.20	*****	1.20	*****	.40	.75
75Cleveland 4		1.50	3.00	*****	.75	.75	*****	*****	*****	*****	.50	.50	1.50	.75	.75	*****	.75	1.50
75Dodge Bros. A		1.25	3.00	.75	.75	.75	.75	2.75	1.50	1.20	1.20	.60	1.20	*****	3.00	3.00	******	
00Durant A-2	1.00.	1.50	2.00	*****	.40	.60	.40	1.00	.30	.75	.40	.40	2.00	*****	.75	*****	3.00	.00
75Essex	.75.	1.75	3.00	.75	.50	.60	.75	3.40	1.90	*****	.75	.75	1.50	******	*****		******	*****
75Essex		1.75	3.00	.75	.50	.60	.75	3.40	*****	*****	.75	.75	1.50		*****			*****
65Ford		1.00	1.50	.30	.50	*****	.40	.75	*****	*****	.30	.50	.75	*****	1.00	*****	2.50	.00
90Franklin 10		1.50	4.00	*****	1.05	1.40	.75	1.75		1.25	.60	.75	0.00000	.30	*****	*****	1.25	1.45
55Ford 1 Ton True	.65.	1.00	1.50	.30	.50	******	.40	.75		010100	.30	.50	.75	*****	1.00	*****	2.50	1.00
75Hudso	.75.	1.50	3.00	.75	.50	.60	.75	3.75	1.90	******	.75	.75	1.50	*****	1.50	*****	******	******
75Hupmobile 4 Cy	.75.	1.50	2.25	*****	.50	.75	.75	2.25		.75	.40	.40	1.00	.30	1.00	*****	.75	1.20
60Jewett 2 brak		1.50	3.75	******	.60	.75	.75	2.00	******	1.00	.75	.75	1.20	.50	.75	******	1.50	.75
50Jewett 4 brak		1.50	3.75		.60	.75	.75	2.00	*****	1.00	.75	.75	1.20	.50	.75	******	1.59	.75
Jordan		******	*****	******	******	*****	******	2.50	******	*****		.75	******	******	*****	******	******	******
75Jordan		******	*****	.50	.75	.50	.75	2.00	******	1.00	.50	1.00	2.50	******	.75	*****	.75	1.50
2 —Operation No.	M2 -	M1	L8	L7	L6	L5	L4	L3	L2	L1	G17	G16	G15	G14	G13	G12	G11	G10
50Lincol	1.50.	2.00	5.50		1.00	1.20	1.00	7.50	******	******	*****	997704	2.75	.50	******	*****	******	5.00
Marmon 2	******			.25	******	******	*****	*****	*****	******	******	*****	*****	.25	*****		.75	1.50
75 Maxwe	.75.	1.20	3.50	.40	.50	.75	.65	2.25	*****	1.35	.40	.40	1.20	.30	1.20	2.25	1.20	.20
75 Nas	.75.	1.25	4.00	.30	1.45	1.00	.90	1.75	.80	1.10	.30	.40	2.25	.30	*****	*****	.75	.75
60 Oakland 44-5		1.00	3.00	.30	.40	.40	.60	1.75	2.00	1.00	.30	.50	.75	.30	1.00	*****	.50	*****
75Oldsmobile 6-3	.75.		1.25	******	1.50	1.50	.50		*****	1.50	.50	.50	1.50	.50	.75	*****	.75	1.50
55Overland 4 to 8		.75	4.00	*****	.50	.65	1.00	1.30	*****	.75	.75	.75	.75	.30	1.50	*****	2.25	1.50
10Packard		1.50	*****	******	*****	*****		******	000000	******	1.25	1.50		.25	1.50	*****	2.25	3.00
Packard		1.50	4.50	******	1.20	.75	.75	******	1.50	******	1.25	1.50	*****	.25	1.50	******	2.25	3.00
50Palge—10A Con		1.50	3.75	*****	.60	.75	.75	2.00	*****	*****	.75	.75	1.20	.50	.75	*****	1.20	.75
75Peerless 8, 6	.75.	1.25	4.50		.75	.75	1.00	2.20	.50	1.50	.60	.50	1.00	******	1.35	*****	******	******
		******	992000	******			******	******	*****	******	******		******	******	******	*****	*****	******
		1.30	4.40		.75	.75	1.00	2.20	.30	1.50	.40	.60	1.20		******	*****	******	*****
Pierce Arrow 8			4.40	******	.75	.75	1.00	2.20	.30	1.50	.40	.60	1.20	******	******		****	*****
50Pierce Arrow 8		1.30			.50	.60	1.00	3.00		1.50	.40	.70	1.50	.30	1.50		1.50	2.25
50	3.50		4.50				.40	1.10	******	.80	.30	.50	2.00	*****	.75	******	1.50	2.25
Pierce Arrow 8 50	3.50 1.20	1.50 .80	$\frac{4.50}{3.00}$	*****	.30	.30											4 50	2.25
Pierce Arrow 8	3.50 1.20 .60	1.50	3.00	*****	.30			2.60		1.50	.50	.50	1.50	.30	.75	******	1.50	
Pierce Arrow 8	3.50 1.20 .60	1.50 .80	3.00 4.00		.75	.75	.90	2.60	*****	1.50	.50	.50	1.50	.30	.75	******	1.50	2.25
Pierce Arrow 8	3.50 1.20 .60 .80	1.50 .80 1.40 1.40	3.00 4.00 4.00	******	.30 .75 .75	.75 .75	.90	2.60	*****	1.50	.50	.50	1.50	.30	.75			
Pierce Arrow 8	3.50 1.20 .60 .80 .75	1.50 .80 1.40 1.40 1.50	3.00 4.00 4.00 4.00	******	.75 .75 .50	.75 .75 .75	.90 .90 1.40	$\frac{2.60}{2.50}$	*****	$\frac{1.50}{1.50}$.50 .30	.50 .75	$\frac{1.50}{1.50}$.30	.75 .75	******	1.50	1.90
Pierce Arrow 8 50 Reo 7 0 Reo F & V Spee 20 Rick, 6—Earl 50 Star 19 30 Studebaker Big, Spe	3.50 1.20 .60 .80 .75 .75.	1.50 .80 1.40 1.40	3.00 4.00 4.00	******	.30 .75 .75	.75 .75	.90	2.60	*****	1.50	.50	.50	1.50	.30	.75	******	1.50 .75	2.25 1.90 1.50
Pierce Arrow	3.50 1.20 .60 .80 .75 .75.	1.50 .80 1.40 1.40 1.50 1.25	3.00 4.00 4.00 4.00 3.75	.40	.30 .75 .75 .50 .75	.75 .75 .75	.90 .90 1.40 .60	2.60 2.50 1.40	.20	1.50 1.50 .80	.50 .30 .75	.50 .75 .50	1.50 1.50 1.50	.30 .30	.75 .75 1.20	******	1.50	1.90

G11 on Model 20 Willys Knight, \$3.00.

(Continued from page 33)

it is found that certain parts require replacement or refitting the operation to cover the new part or hand work required will always be a SUB or MINOR, or BENCH operation.

The user will note that many of the operations are printed in "bold" or black face type. The purpose of this difference in type is to assist the user in distinguishing a job that is complete in itself from a minor or bench job that requires a certain other operation for its completion.

By combining a major or complete operation with certain of the Minor or bench operations it is possible to quote accurate prices for practically any repair job regardless of whether the job is being done as a separate independent job or incidental to work on that or an adjacent unit or part. It should be remembered that the exact amount of work that is to be executed on any operation is listed in the description of the operation. If more or less work is to be done find the operation or group of operations that will cover all of the repairs you intend to execute.

How to Use the Chart

At first glance the reader many be inclined to think that the operations listed do not cover sufficient number of repair jobs or that they do not cover combinations of jobs without overlap. No overlapping or undercharging will occur if the reader will spend a little time in studying the operations before putting them to actual use. Visualize a car that is in need of a repair and make a list of the work that is to be done on it. Then to familiarize yourself with the chart, write out a repair order, using the chart as a guide to cover the work required. The versatility of the price data as compiled is illustrated in the following typical list of work to be done and the repair order that would be written to sell it at flat rates, as listed in the MOTOR AGE

The supposed car is a Maxwell, and the work to be done comprises:

- 1-Tighten connecting rod bearings.
- 2—Install two new oversize piston pins.
- 3-Renew rings on all pistons.
- 4-Grind valves and tune engine.
- 5-Install all new valve guides.

- 6-Install one new lower connecting rod bearing.
- 7-Renew clutch discs.
- 8-Install new rear wheel brake drum.
- 9—Install new second speed transmission sliding gear.
 Transposing the above work into a repair order made from the chart:

Qua	ntity Oper	ration Labor	Charge
1	E35	Take up lower rod bearings\$	4.25
2	E28	Renew one pin after E9	1.50
1	E22	Renew set rings & align rods	6.00
1	E14	Grind valves, carbon, tune	8.00
1	E16	Renew guides, valves out	3.00
1	E39	Renew rod bearing after E10	1.90
1	C2 & TC4	Combined	5.00
1	B14	Renew rear brake drum	3.00
1	T6	Renew 2nd sliding gear	3.75

\$36,40

In some instances it will be necessary to sell more than one operation in order to cover a specific repair. In doing this it is very important that the operations as written be correctly interpreted. Take for example, operation A1 which is printed in bold face type. Under this operation, the front axle center or "I" beam, is to be removed and reinstalled only. It does not include any repair work on the axle center. Operation A1 therefore will always be used as the "lead" or major operation for any front axle repairs that necessitate the removal of the axle center to execute. If the front axle beam is bent and you wish to sell an operation that will cover its removal, straightening and reinstallation, sell operations A1 and A3. The sum of the prices for A1 and A3 will be the total labor charge for the job. A similar procedure is utilized where it is desired to rebush the front axle, and spindles or knuckles. In this case major operation No. A4 added to operation No. A10 will give the total labor charge for rebushing both knuckle axle and arm assemblies.

The engine operations are arranged similarly so as to make the schedule available for flat rate selling on any possible engine repair job. In order to secure this result it is only necessary to analyze the wording of each operation and at the same time visualize the particular car construction for which the repairs are intended.

Index to Operations by Groups and Subject

Parts.	Operations.	Page.	Parts.	Operations.	Page.
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Fan		41	Valves, guides, tappets		37
		42	Transmission	T1 to 11	45
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How to Tell the Age of a Car

SERIAL numbers of passenger cars are useful in both a merchandising and maintenance way.

To the motor car salesman they are of value in ascertaining the exact age of a car which is to be taken in on a new one. There is no guessing as to how much service such a car has seen because the serial number stamped somewhere on the chassis or body denotes the year in which the car was built. Inasmuch as the period during which a car was built is to a great extent the determining factor as to its present value, the serial numbers naturally are the one and only reliable source of information on which such value can be based.

Of Use to Shop Men

The maintenance man and shops find the serial numbers of use not only when it comes to determining the age of a car, but for ordering parts for it. Every car manufacturer stresses the necessity of giving the serial and engine number of a car when parts are ordered from the factory for such a car. Although the serial numbers in this issue apply to the cars made over certain periods and do not, of course, apply to any one car of a certain make, they do enable the dealer or shop to tell in what period the car was built. This latter fact often helps greatly in enabling the service or parts department at the factory to fill an order properly.

The recovery of a stolen car often is brought about through identification by the serial number and here again the data published on these pages can be used to advantage.

In some cases the serial numbers are an indication as to which plant of a company built the car. Thus the numbers 1, 2, 3, etc., preceding the serial numbers on Chevrolet cars indicate in which plant of the company the car was built. Reference to these plants is made in the tables.

In compiling the serial numbers for this issue of Motor Age, some changes have been made over previous tables published in this magazine to make them more easily understood and useful. For example, some companies which have been out of business for several years and which produced but relatively few cars have been eliminated from the list of makes.

Also some serial numbers prior to 1918 have been eliminated from concerns still in business. Exceptions to this are concerns which have been in business for a long time and which consistently have been making cars that have a market price after being in use for many years. There are some cars of high grade manufacture and whose maker may be out of business at the present time and yet these cars have a good resale value. In this case we have published the serial numbers of such cars.

When to Write the Factory

Mention should be made that some cars are numbered by manufacturing zones and in this case it virtually is impossible to publish such figures so they would be of help to the dealer or maintenance man. The cars thus numbered are mentioned in the tables. In such cases it always is best to write to the car maker for the serial numbers.

Motor Age Passenger Car Serial Numbers

NOTE:—Serial numbers for cars earlier than 1918 can be found in the Chicago Show Issue and specifications Number of Motor Age, published January 22, 1925

(The prices shown represent the Standard Touring Models)

ACE-	The Amer	ican Mo	tor Tr	uck Co., New-	ANDE	RSON (Con	atinued)		
ar	k, Ohio				Year	Model	Cyls.	Price	Serial Numbers
Year	Model	Cyls.	Price	Serial Numbers		Series 40	6		423-38129
1920	L	6		1001 to 1556	1922	Series 40	6		4155-42157
1921	G&H	6	2975	2002 00 2000	1923	41	6	1195	
1001	L	6	2260		1923	Series 50	6	1595	
		Discontin			1924	Series 41	6	1195	
		Discontin	ucu		1924	Series 50	6	1595	
ALLE	N_Allen	Motor C	o Coli	ambus, Ohio	Numbe	ers are arrange			and do not run
Year	Model	Cyls.	Price	Serial Numbers		ecutively			
1918	41	4		18000-21000	Numbe	er on plate und	ler hood,	right sid	e dash
1919	43	4	1395	20000 22000	ADDE	DSON_An	nemon	Broth	ers Auto Co.,
Numbe	r stamped on	front mot	or cross	member		okomo. In		III OUL	cis itato con
1920	43	4	\$1495	50001 and up	Year	Model	Cyls.	Price	Serial Numberr
				ont spring hanger	1917	6-17	6		16001-17000
1921	Series 43		\$1385		1914	8-17	8		12000-13000
		iscontinue			1918	6-18	6		17000 up
	, -				1919	8-18	8	2550	17000 up
A 34 TO A	CCADAD	W-11	C-1 35	fg. Co., Chica-	1919	8-19	8	2800	
		- x emow	CHD M	ig. Co., Chica-	1919		8		18000-21000
	o, III.			0 : 1 27 1	1920	Anvsy 8-20	8	2950	10000-21000
Year	Model	Cyls.	Price	Serial Numbers	1920		8	4000	
1922	R	6		4150-4164	372	Anvay.)
1923	R	6		4165 up	Numbe	er on right from		reg	10000 01700
1924	D1	6		70001 to 70050		8-20	8		19000-21702
1925	D1	6	1695	70051 and up	1001	Anvsy.	8	4250)
	er on left front				1921	8-21-S	8	3500	07000 00000
Change	ed to Hertz, 1	925			1922	8-21-S	8		25200-30000
					1923	8-23-S	8		25200-30000
AME	RICAN-AT	nerican	Motor	s Co., Plain-	1923	6	6	1535	T 1
	eld. N. J.				1924	6	6		T-6000 and up
Year	Model	Cyls.	Price	Serial Numbers	1924	8	8	2485	
1918	B	6		251-1000	Numbe	er on right from	nt side of	crankca	80
1919	В	6		1894-2378	ATTERT	TRN_Anh	wm And	amabil	e Co., Auburn,
1920	B-6	6	1865			nd.	irm Aut	omour	c con manning
	er on left side		1000		Year	Model	Cyls.	Price	Serial Numbers
Numbe	or on inside	of dash m	nder hor	d, left hand side	1918	6-39-B	6	\$1345	
1921	C-6	6		3000-4000	1919	6-44	6	1685	
1922	C	6	1850	8000 1000	1919	6-39H & 39		1695	
1923	D-66	6		5,000 and up		er on floor bos			
1924	D-66	6	1695		1920	6-39	6		22100 and up
	er on plate un		1000						serial numbers of
- Lines Ly	or on place un	Disconti	med		this	car do not rui	at, icit si	ivolv or	har woose
		Discontin	1000		1921	6-39	Consecue	21605	29725-33359
AND	ERSON-A	nderson	Moto	r Co., Rock	1921	0-09		\$1000	33360-34116
	IIII, S. C.		2.20.00	a con acoca	1922	6-51	6	1571	33360-36999
Year	Model	Cyls.	Price	Serial Numbers		6-43	6		50,000 and up
1918	400-A	6	\$1435		1923	6-63	6		37,000 and up
1919	Series 30	6	1850		1923	6-43	6		
1920					1924	8-63	8	1395	
	Series 30	6	1850					1895	
1920	30A-30G	6	1850	331-37272	Numb	er on footboar	d in drive	r's comp	ertment

BARI	EY—Barle	ey Moto	or Car	Co., Kal	ama-
Year 1922 1923	Model 6 6-50	Cyls.	Price \$1395 1395	Serial No 35000-3521	
1924	6-50 er near light b	6 racket, ri	1395	side rail	
		Disconti			
	S-Beggs	Motor	Car Co.	Kansas	City,
Voor	Model	Cyla	Price	Serial No	mhore

		Motor C	ar Co.,	Kansas City,
	0.			
Year	Model	Cyls.	Price	Serial Numbers
1918	18-T	6	\$1530	1018-11008
1919	19-T	6	1580	1019-11609
1920	20-T	6	1630	210-21290
1921	20-T	6	1775	21300-21540
1922	20-T	6	1175	21550-21820
1923	20-T	6		21830 and up
1924	Production	n Limited		arous and ap
	r on outside dash under l		nt frame	horn and on plate

BIDDI	E-Biddle	Motor	Car C	o., New York,
N.	Y.			
Year	Model	Cyls.	Price	Serial Numbers
1918	H	4	\$2750	H100-H1099
1919	H	4	2985	H1100-H1179
1920	B-1	4	3950	2000 up
	B-5	4		
Number	on dash; en	gine nur	nber on	upper left front
Crank	B-1		*2050	2000 up
		*		
1921	B-1	4		3000 up
1922	B-1 & B-5	4	2950	3500 up
1923	B-1 & B-5	4	2950	4000 and up
Number	on right side	of dash Discontin	nued	

BIRC	H-Birch	Motor C	ars, Cr	icago, Ill.
Year	Model	Cyls.	Price	Serial Numbers
1920	30-B	4		B-126 up
	40	4		42000 up
	45-B	6		N-151 up
Numbe	er on name r	late on das	h	
1921	Super 4	4	\$1345	
	Light 4	4	1195	
	Light 6	6	1595	
1922	Producti	on Limited		
		Disconti	inued	

BOUR-DAVIS—Louisiana Motor Car Co., Shreveport, La.	CHALMERS (Continued) Year Model Cyls. Price Serial Numbers 1920 Roadster 6 \$1795 94001 to 110000	CLEVELAND (Continued) Year Model Cyls. Price Serial Numbers Number plate on right hand frame members about 12
Year Model Cyls. Price serial Numbers 1918-19 20 6 \$1595 1700 1 up 1920 20 6 1700 1 up 1920 20 6 1825 1-200	5-Passenger 6 1795 115001 to 200000 7-Passenger 6 1945 240001 and up Sport 6 1995 115001 to 200000 Coupe 6 2595 115001 to 200000	inches in front of radiator; engine number front of crankcase under oil filler 1923 42 6 \$995 34500-40000 1924 42 6 1045 40000-60000 1925 43 6 1095 60000 and up
21 6 2585 2000-2096 1921 21-S 6 2385 Number on front seat base opposite left hand door; engine number on left side crankcase Number on front seat near floor board Discontinued	Sedan 6 2745 111101 to 112000 114001 to 114101 1921 6-30 & 35-B 6 1545 200000 up Number on brass plate on left horn of frame just in front of radiator 1922 35-B 6 3395 225001-225203	1925 31 6 895 C-2000 and up Number stemped on the outside of right hand front frame member, and to the rear of the front spring bolt CLIMBER—Climber Motor Corp., Little Rock, Ark.
BREWSTER—Brewster & Co., Long Island City, N. Y.	35-C 6 1495 130001-131308 (131502-131505 1923 Y 6 1185 Y-100 to Y-10399	Year Model Cyls. Price Serial Numbers 1920 T 4 \$1465 213 to 320 S 6 Number on left front frame
Year Model Cyls. Price Serial Numbers 1920 41 4 \$9000/91242-91241 1921 91 4 7000\ 1922 91 4 5000 41242-41341	Number on right frame rail, in front of dash Discontinued	1921 4 4 \$1385 T100-T390 6 2250 S1000-S1400 Production limited
1923 02 4 5700 02342 and up 1924 02 4 7500 02342 and up Number on plate screwed on the motor side of dash Serial numbers do not run in rotation	CHAMPION (formerly Direct Drive)— Champion Motors Corp., Philadelphia, Pn. Year Model Cyls. Price Serial Numbers	1923 4 4 1095 Production I't'd 1923 6 6 1695 Production I't'd Number on left front frame and also on motor Production Limited
BRISCOE—Briscoe Motor Corp., Jackson,	1919 C & CS 4 \$1150 C-100—C-216 1920 C-4* 4 C-300 up	COLE—Cole Motor Car Co., Indianapolis,
Mich. Year Model Cyls. Price Serial Numbers	Number plate on body under seat 1920 Touring 4 \$1350 100 to 299	Ind. Year Model Cyls. Price Serial Numbers
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1921 Tourist 4 1250 C-200—C-299 Special 4 1595 CS200—CS299 1922 Production Limited \$895 C-400 and up Number on inside dash on instrument board	1916 666, Big 6 6 15175-16000 860, Series 30 8 30000-40000 1917 860, Series 40 8 40000-50000 1918 870 8 50000-59478
1921 4-34 4 1085 57500 and up 1922 4-43 4 58588-58606 Number on dash plate Name changed to Earl	Discontinued CHANDLER—Chandler Motor Car Co.,	1919/ 1920 870, 71, 72, 78, \8 3250 59000 to 65000 79, 83, 85, 890 8 3250
Discontinued	Cleveland, Ohio Year Model Cyls. Price Serial Numbers	1922 890 8 2485 66875-68644 1923 890 8 2175 69650 and up
BUICK—Buick Motor Co., Flint, Mich. Year Model Cyls. Price Serial Numbers 1916 D-44-45 6 \$985 144717-254501 D-54-55 6 14501	1918 New Series 6 35001-65000 1919 New Series 6 65001 to 82000 1920 New Series 6 \$1895 82001 to 106000	1924 Master 8 2325 Number on right front spring hanger and under right front seat cushion
D-54-55 6 1450 1917 D-44-45-46 6 1040 D-34-45-537 4 660\254502-343782	Number on right front engine arm up to car number 72000; cars numbered above 72000 the number is on frame under right headlight and fender	COLUMBIA-Columbia Motors Co., Detroit,
E-49 6 1385 1918 E-4-34-35 4 795 343783-480995	on frame under right heading and render 1921 6 \$1785 106001 to 115000 Chandler cars are not listed by serial numbers for each	Year Model Cyls. Price Serial Numbers
E-6-44-60 6 1265 Number on left front side of frame member; engine	year, but are classed as new series of current model 1922 SS-29 6 \$1595 115001-126300	1918 C 6 \$1350 2000-3199 D 6 1450 501-889
number on left side of crankcase	1923 32-32A 6 1485 126001 and up 1924 33 6 1585 147001 to 148000	C-S 6 2445 1850-1950 1919 C 6 1600 3201-3389 D 6 1745 1000-1132
Number on rear end of left frame member; engine number on left side crankcase	1924 33A 6 1595 148001 and up Number stamped on right hand frame rail behind front fender iron	Number on front seat heel board E 6 \$1845 101 up H 6 2850 100 up
1920 K-44-50 6 \$1495 547524-689794 1921 44-7 6 1525	CHEVROLET-Chevrolet Motor Co., New	C-S 6 2445 1951-1968 1920 C 6 1695 4000 and up
48-50 6 1735 1922 34-37 4 935 688795 and up 1922 44-47 6 1395 753000 and up	York, N. Y. Year Model Cyls. Price Serial Numbers	D 6 1845 1400 and up E-CS 6 2850 2000 and up
1922 44-47 6 1395 753000 and up 1922 48-50 6 1785 753000 and up 1923 34-39 4 885 826497 and up	1918 490 4 \$ 635 FA-5 4 935	H 6 100 and up E-CS-H 6 10000 and up DC & CS 6 1795 10000-20000
1923 41-47 6 1195 868521 and up 1923 48-55 6 1435 881721 and up	D-4 8 1385 FA-5 4 1045	1922 8-R 6 1475 21400 up
1924 Standard 6 1175	D-4 8 1385 FB-5 4 1135	6-Y 6 985 1 up 1923 8-R 6 2175 21400 and up 1923 6-Y 6 1475 3331 and up
Number on left frame at rear Numbers run according to body style	1920 FB-50 4 735 1135	Number on upper toe board
CADILLAC—Cadillac Motor Car Co., Detroit,	490 4 735 T 4 1460 FB Touring 4 1295	COMET—Comet Automobile Co., Decatur,
Mich. Year Model Cyls. Price Serial Numbers	400 Touring 4 705	Year Model Cyls, Price Serial Numbers
1915 Type 51 8 \$1975 A6000-A19001 1916 Type 53 8 2080 A20000-A38003	FB 4 1185 1922 490 4 525	1917-18 C-51 6 1-500 1919 C-52 6 500 up
1917 Type 55 8 2080 before Dec. 14, 1917 55-A1-55-S2	FB 4 975 Number on plate under instrument board on dash	1920 C-53 6 \$2150 701 and up 1921 C-53 6 2450
\$2240 after Dec. 14, 1917 1918-19 Type 57 8 \$3220 57-A1-57-TT-146 1920-21 Type 59 8 3590 59-A-1-to 59-	1923 Superior 4 \$ 525 1924 Superior 4 510 1925 K 4 525	Number under hood on dash, left side Discontinued
Number back of the right cylinder block	Number on plate on left of right side of front seat frame As Chevrolet cars are numbered by manufacturing zones it is not possible to reproduce the numbers in such a	COMMONWEALTH—Commonwealth Motors Co., Chicago, Ill. Year Model Cyls. Price Serial Numbers
1921-22 61 8 \$3150 61-A-1 to 61-2 18006 1923 63 8 2885 V-63-A-1 and up	way as to be of use to the dealer Where further information is required on a specific car	1918 40 4 \$ 995 DX732-D0883 1919 40 4 139541999
Number stamped on the right rear corner of crank case at the rear of the right cylinder block	write to the plant where the car was manufactured, addressing your letter to the Chevrolet Motor Co. The numerical prefix in the serial number denotes the plant where the cars are manufactured. These	1920 42 4 1395 42000 to 44000 1921 44 4 1595 Number plate on cowl 1922 Production limited
CASE_J. I. Case Thresh. Much. Co., Racine,	plants are located as follows: Up to and including 1923 Since 1923	Discontinued
Wis. Year Model Cyls. Price Serial Numbers	1. Flint, Michigan 2. Tarrytown, New York 2. Tarrytown, New York	COURIER—Courier Motors Co., Sandusky, Ohio
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3. St. Louis, Missouri 6. Oakland, California 7. Fort Worth, Texas 9. Oshawa, Ontario 2. Buffalo, New York	Year Model Cyls. Price serial Numbers 1922 6 6 \$1395 10000-10145 1923 6 6 1295 10150 and up Number on left front spring horn
U-19) \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	21. Janesville, Wisconsin	Discontinued
1921 V 6 2650 37780-38744 1922 W 6 2200 43751-44035	CHRYSLER—Maxwell Motor Co., Inc., Detroit, Mich.	CRAWFORD—Crawford Automobile Co., Hagerstown, Md.
X 6 1790 38755-40017 1923 X 6 1790 39441 to 40807	Year Model Cyls. Price Serial Numbers 1924 B 6 \$1395 1001 to 32812	Year Model Cyls. Price Serial Numbers 1918 18-40 6 \$2250 1235-1294
X 6 1790 38755-40017 1923 X 6 1790 39441 to 40807 1923 W 6 1990 43860 to 44284 1924 W 6 1950 44249-44260 1924 Y 6 2475 44307-44413	1925 B 6 1395 32813 up Number plate on front of dash, also on left frame side	1919 19-6-40 6 2500 1295-1337 1920 20-6-40 6 3000 1338 to 1650
1924 X 6 1695 40808-41387	member at rear spring horn	1921 6-40 6 3000 Number on seat next to door
1925 J. I. C. 6 1885 75011 and up 1925 X 6 1595 41388 and up	CLEVELAND—Cleveland Automobile Co., Cleveland, Ohio	1922 22-6-70 6 \$3000 1485-1570 1923 23-6-70 6 3100 1575 and up
1925 Y 6 2225 44444 and up Number on dash and in front cross bar on frame	Year Model Cyls. Price Serial Numbers 1919 40 6 \$1385 1001 to 3485	See Dagmar Number on floor boards under cowl
CHALMERS-Maxwell Motor Co., Inc., De-	1920 40 Touring 6 1385 3485 to 21190 40 Roadster 6 3490 to 21190	Discontinued CROW-ELKHART — Crow-Elkhart Motor
Year Model Cyls. Price Serial Numb :s	40 Sedan 6 3914 to 21190	Co., Elkhart, Ind. Year Model Cyls. Price Serial Numbers
1918 35-C 6 \$1565 94001 and up 1918 35-C 6 1685 94001 and up Number on left front horn of frame	1921 40 Chassis 6, 4174 to 21190 1921 40 6 1295 24190-25000 1922 41 6 1195 25000-34500	1918 CE-32-34 & 36 4 \$ 995 13296-15292 1919 CE-32-34 & 36 4 1095\15293-17411
Argunder on few front florii di Iranic	1195 25000-34500	H-42-44 & 46 6 1355

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CROW-ELKHART (Continued) Year Model Cyls. Price Serial Numbers 1920 S-65-64-63-67 6 1745 18900 to 19930 L-65-64-63 4 1495 18901 to 19933 1921 L-63-65 4 1295 S-63-65 6 1545 Number on seat frame under front cushion 1922 Production limited Taken over by Century Motors Co., Elkhart, Ind. Discontinued	DORRIS (Continued) Year Model Cyls. Price 4350 (8675 to 9000 (9017 to 9088 (9017 to 9088 1921 6-80 6 3950 9230 to 9345 1923 6-80 6 3950 9230 to 9345 1923 6-80 6 3950 9346 to 9542 1924 6-80 6 4150 9543 to 9594 Serial number on top of crankcase DORT—Dort Motor Car Co., Flint, Mich.	Year Model Cyls. Price Serial Numbers 1923 6 6 6 850 100001 to 499999 1924 6 6 900 100001 to 499999 Serial number on dash Serial numbers are allotted by body styles and are not designated on a yearly basis FLINT—Flint Motor Co., Flint, Mich. Year Model Cyls. Price Serial Numbers
CUNNINGHAM—Jas. Cunningham Son Co Rochester, N. Y. Year Model Cyls. Price Fried Serial Numbers 1915 8 4	Year Model M-8 & M-11 Cyls. 4 886 Price 24369-49330 Serial Numbers 985 24369-49330 1920 M-15 & M-10 4 985 49331 and up 985 4936	1923 6 6 81195 1924 55 6 1595 1106 to 12279 1924 40 6 1075 501 to 6808 Number on plate on dash under hood
Number on left frame member near radiator	Number on plate on left side dash Discontinued DUESENBERG—Duesenberg Automobile & Motors Co., Indianapolis, Ind. Year Model Cyls. Price Serial Numbers 1923 8 8 \$5500 598 to 950 1924 St. 8 8 6250 951 to 1000 Number on right hand side front dash	1920 T 4 525 3659971 to 5638071 1922 T 4 348 5638072-6953071 1923 T 4 298 6953072 and up *First serial number effective August 1st 1924 T 4 \$ 290 Number stamped on left side cylinder block just above water inlet connection
DANIELS—Daniels Motor Car Co., Reading, Pa.	DUPONT—Dupont Motors, Inc., Wilming-ton, Del.	FRANKLIN—H. H. Franklin Mfg. Co., Syracuse, N. Y. Year Model Cyls. Price Serial Numbers 1916 M (Ser. 8) 6 \$1950 21981-25234 and up 1917 B (Ser. 9) 6 40001 and up 1918 B (Ser. 9) 6 2450 29001 and up 1919 B (Ser. 9) 6 2450 29001 and up 1920 S-9B 6 2850 68900 and up 1921 9-B 6 2650 100000 and up 1921 19-B 6 1950 133001 up 1922 10-B 6 1950 133001 up 1923 10-B 6 1950 134013 and up 1924 10-C 6 1950 144589-9 and up 1925 11 6 2650 151500 and up 1925
Number on dash board on right hand side	B-22 6 1650 X100-4682 Number on plate on front dash under hood 1923 A-22 4 \$890 1 to 10974 1924 A-22 4 \$890 10975 to 150910 Number on right side of dash under hood As Durant cars are numbered by manufacturing zones, it is best to obtain serial numbers from Durant Motors, Inc., Fisk Bldg., New York, N. Y. EARL—Earl Motors, Inc., Jackson, Mich. Year Model Cyls. Price Serial Numbers 1921 40 4 \$1095 70000 to 70433	GARDNER—Gardner Motor Co., St. Louis, Mo. Year Model Cyls. Price Serial Numbers 1920 G 4 \$1125 1000 and up 1921 TRG 4 995 6498-10001 1922 TR 4 895 9674-A 18001-A 1923 5 4 995 18002-B to 26043-C 1924 5 4 995 29153-C and up 1925 8 8 1995 84-32501 and up Number on right hand side under front cushion
53 6 2350 54 6 3185 55 6 3185 56 6 2225 57 6 2350 1921 D-19 8 5350 6001 to 7885 1922 71 6 1295 10000-10637 61-67 6 1595 8891-9442 1923 71 6 1295 1000-11239 1923 63 6 1595 9211-9525 Numbers on left side of crankcase 1924 63 6 1295 11240 to 12517 1924 80 6 1295 15001 to 15123 On frame above rear right motor arm	1922 40 4 1095 70434-74363 1923 40 4 1095 74364 to 80401 Number on front of dash	GRANT—Grant Motor Car Corp., Cleveland, Ohlo Year Model Cyls. Price Serial Numbers 1918 G 6 \$1055 33001-40001 1919 6 1120 1920 H 6 1550 50001 and up HY 6 1550 51700 and up HX 6 1785 51300 and up 1921 6 6 1550 Number on dash under hood Discontinued GRAY—Gray Motors Corp., Detroit, Mich. Year Model Cyls. Price Serial Numbers Serial Nu
DIXIE FLYER—Kentucky Wagon Mfg. Co., Louisville, Ky. Year Model	7-R 6 1700 21000-32000 1922 K-4 4 1095 20000-25000 7-R 6 1395 30000-33000 1923 4-40 4 995 25000 and up 1924 4-41 4 995 1924 6-51 6 1220 1924 8-80 8 2165 Number on right rear spring horn ELGIN—Elgin Motor Car Corp., Elgin, III. Year Model Cyls. Price Serial Numbers	1922 N
Vear Model Cyls. Price Serial Numbers	1916 6 8 845 1-1720 1917 17 6 985 17-100—17-3900 17 6 1995 17-3901—17-9964 1918 17 6 1165 17-6965—17-7400 17 6 1235 17-7400—17-7764 1919 H 6 1395 101-1500 H 6 1485 1501-2600 1920 K 6 1485 K-2601 to K-10638 K-10	1923
DORRIS Dorris Motor Car Co., St. Louis, Mo.	1921 K-1 6 \$1495 1922-23 Production limited Discontinued Discon	Year Model Cyls. Price Serial Numbers 1918 A-45 6 \$1685 1001-1025 1919 A-45 6 1685 1026-1625 1920 6 1700 up Number on right side heel board under front seat; engine numbers left side crank case 1921 54-T 6 2395 to 2530 60-S 6 \$2285 4500 to 4615 1922 60 6 1585 9000 up 1923 66 6 1395 9000 and up Number on left front seat riser Discontinued

HARROUN—Harroun Motor Sales Corp., Wayne, Mich.	HUPMOBILE (Continued) Year Model Cyls. Price Serial Numbers	KISSEL-Kissel Motor Car Co., Hartford, Wis.
Year Model Cyls. Price Serial Numbers 1918 A-A-1 4 \$ 895 550-2381	1918 R 4 {\$1250} 1350} R1-R15000	Year Model Cyls. Price Serial Numbers 32-4 \$1050 30001-33001
1919 A-A-1 4 995 2382-2624 1921 A-A-2 4 1195	1919 R 4 1335 R20001 up	36-4 4 1250 16576-20000 42-6 6 1485 25456——
Number plate on right side front seat, under cushion Discontinued	R-3 4 1450 { 1920 R-3 4 1685 29000 to 30000 R-4 4 1685 30001 to 39999	1917 100 pt. 6 6 1195 38-101 up Double 6 12 2250 12-101 up 1918 100 pt. 6 6 1495
HATFIELD—Cortland Cart & Carriage Co., Sidney, N. Y.	R-5 4 1685 40000 and up 1921 R 4 1485 47500-61100	Double 6 12 2250 1919 Cus. Bld. 6 2875 45-101 up
Year Model Cyls. Price Serial Numbers	1922 R 4 1250 61100-95000 1923 R 4 1175 95001 to 130000	Cus. Bld. 6 2450 45-200 up 1920 Cus. Bld. 6 3475
1919 A-42 4678 1920 A-42 4 700 up 1921 A-42 4 \$1495	1924 R 4 1225 Number on plate where steering column joins dash	1921 45 6 3475 1922 45 6 1885
1922 A-42 4 1345 1923 A-22 4 1345	INTERSTATE—Interstate Automobile Co., Muncle, Ind.	1923 55 6 1585 100 and up 1924 55 6 1685 Number stamped on front end right frame member
Discontinued	Year Model Cyls. Price Serial Numbers	adjacent to right head lamp. Engine number on right front motor arm. Numbers are not given in
HAYNES—Haynes Automobile Co., Kokomo, Ind.	1916 T 4 \$ 850 11504-14528 1917 T 4 850 14529-19108 1918 T 4 1000 19109 up	years, as the numbers do not close one year to begin another
Year Model Cyls. Price Serial Numbers 1916 34, 5, 6, 7 6 \$1385 10951-15999 41 12 2225 10000 24000	Number plate under front seat Discontinued	KLINE—Kline Car Corp., Richmond, Va.
1917 36, 37 6 1595 16002 to 29608	JACKSON-Jackson Automobile Co., Jack-	Year Model Cyls. Price Serial Numbers 1918 6-38GA 6 \$1495 5000-5800 1919 6-42 6 1865 6000-7000
1918 38-39 6 2150 29650 to 32893 44 12 2910 21000-24000	son, Mich. Year Model Cyls. Price Serial Numbers	1919-20 6-55-J 6 1965 7000 to 7999 2290 7000 to 7999
1919-20 45 6 2685 32894 to 37999 46 12 3450 21364 to 21516 Number plate on cowl at extreme right; also on timing	1918 349 8 \$1495 Number plate on dash or on front seat heel board	1921 55-K 6 2290 1922 6-55-K 6 1690 8000-8499
gear housing 1920 47 6 38000 to 44185	1920 6-38 6 \$2150 25000 to 27842 1921 6-38 6 1950 Number on end of front seat	Number plate on right front seat floor board
Number on dash 1921 48 12 \$3635	1922 6-38 6 \$1485 26392-26429 1923 Production limited	Discontinued LAFAYETTE—LaFayette Motors Co., Indi-
55 6 1985 46000 to 50700 75 6 2395 75500 to 76800 Number between cylinder block and radiator on crank-	Number on right hand rear cross tube Discontinued	anapolis, Ind. Year Model Cyls. Price Serial Numbers
case 1922 75 6 \$2395	JEFFERY—Nash Motors Co., Kenosha, Wis.	1920 134 8 \$5625 1001 and up 1922 134 8 4850
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Year Model Cyls. Price Serial Numbers 1916 4-62 4 \$1000 57000-60500 6 6 1350 68000-69500	Number on front floor board 1922 134 8 \$4090 1731-2284
Number on right hand front motor support Serial numbers did not run consecutively in 1922	1917 472 4 1095 61000-78000 671 6 1465 86000-96000	1923 134 8 5000 Number on front motor leg, right side
1923 60 6 \$1295 54000 to 55083 1924 60 6 1600 55083-57000 Number on top of timing gear housing	For later models, see Nash Number to left of front frame cross member	Discontinued LEACH—Leach-Biltwell Motor Car Co., Los
HOLLIER-Lewis Spring & Axle Co., Chel-	Discontinued JEWETT-Paige-Detroit Motor Car Co.,	Angeles, Cal. Year Model Cyls. Price Serial Numbers
sea, Mich. Year Model Cyls. Price Serial Numbers	Detroit, Mich.	1921 999 6 \$5200 8000 to 975 1922 Production limited
1918 186T 6 \$1185 6194-7010 188T 8 1385 6194-7010	Year Model Cyls. Price Serial Numbers 1922 6 6 \$1065 10000 up 1923 6 1065	On instrument under hood Discontinued
1919 206T 6 1785 10001-10083 1920 206B 6 1985 10083 up Number on heel board of front seat	1923 6 6 1065 1924 6 1135 Number on left side crankcase	LEXINGTON (Formerly Howard)—Lexing- ton Motor Co., Connersville, Ind.
Discontinued	JONES-Jones Motor Car Co., Wichita,	Year Model Cyls, Price Serial Numbers 1918 O 6 \$1345
HOLMES—Holmes Auto Co., Canton, Ohio Year Model Cyls. Price Serial Numbers	Year Model Cyls. Price Serial Numbers	R 6 1585 1685 Number plate on dash, right side under hood, left front
1918 1 6 \$2900 1-500 1919 2 6 2900 500 up	1918 27-A, 29D 6 5001-6000 1919-20 27-A-E 6 6001 up	spring and on left rear kick-up 1919 R-19 6 \$1785 17296 1920 S 6 1885 18001 up
1920 3 Touring 6 3350 3 Roadster 6	Number under the hood, on right side of cowl board, and stamped on ends of both front spring hangers Discontinued	1921 S 6 1885 19001 and up T 6 2785 30001 and up
3 Coupe 6) 1921 Series 4 6 3350	JORDAN—Jordan Motor Car Co., Cleveland,	1922 S 6 2100 26548-26592 T 6 2285 31120-31308
1922 4 2500 40310 up Number on right side rear end of frame	Year Model Cyls, Price Serial Numbers 1916 B 6 152 to 600	1923 23 6 1795 37251 and up 1924 CC 6 1495 1924 MM 6 1995
1923 production limited Discontinued	1917 60 6 \$1895 601 to 2157 1918 J-60 6 2775 3001 to 5049	Number plate on dash under hood, on left front spring crown, left rear motor arm, and on right side of
HUDSON—Hudson Motor Car Co., Detroit, Mich.	1919 J-60 6 2475 5050 to 5298 1919 F 6 2775 5401 to 7250	rear side rail Number on right front spring hanger
Year Model Cyls. Price Serial Numbers 1916 40 4 G10001-G40000	1919 M	LIBERTY-Liberty Motor Car Co., Detroit,
1917 H 6 H1-H99999 J 6 1-96499 4J 6 75000-97999	1921 F 6 8301 to 8785 1921 MX 6 2095 13501 to 15491	Year Model Cyls. Price Serial Numbers 1918 10-B 6 33501-36450
4J 6 75000-97999 1918 M 6 5000-97499 1919 O 6 5000-90999	1922 F 6 8786 to 9243 1922 MX 6 1795 20001 to 25000	1919 10-B 6 36451-42250 1920 10-C 6 \$1985 50500 up
Numbers on all cars in right hand frame. Also on left side dash under hood. Cars are not designated by	1923 MX 6 1675 25001 to 31700 1923 H 6 1995 35001 to 38000 1924 MX 6 1675 31701 to 33320	Numbers on left side front frame end; motor numbers, 21001 to 27001, on left side of motor 1921 10-C 6 \$1795 54000-56000
yearly models but by a prefix letter such as H, J, M, O 1920* O 6 \$2600 5000 to 364999	1924 H 6 1995 38001 to 38341 1924 K 6 1775 50001 to 51400	1921 10-C 6 \$1795 54000-56000 1922 10-D 6 1395 56000-58400 1923 Production suspended
0 6 370000 to 389999 1921* Super 6 6 2250 400000 to 499999	1924 L 6 2095 40001 to 41800 1925 K 6 2385 51401 and up	Number on left side frame channel just ahead of radiator Discontinued
*These numbers effective December 1, respectively 1922 6 \$1645	1925 L 6 2095 41801 and up 1925 A-8 8 2575 60001 and up Number left front side of dash on plate	LINCOLN-Lincoln Motor Car Co., Detroit,
1923 6 6 1375 1924 6 6 1400 Social numbers are not designated as a yearly basis		Mich. Year Model Cyls. Price Serial Numbers 1920 8 \$4600 1 and up
Serial numbers are not designated on a yearly basis Number on plate on front of dash	Year Model Cyls. Price Serial Numbers	1920
HUFFMAN—Huffman Bros. Motor Co., Elk- hart, Ind.	1921 GWOV 6 \$1800 102-110 1922 G&B 4 985 1000-1016 4000-4081	Number on front of dash on right side 1923 8 \$3800 8710 and up
Year Model Cyls. Price Serial Numbers 1919 W 6 \$1795	1923 G 4 1150 1017 to 1057 Number on left hand side of instrument board	1924 8 8 4999 Number on left side crankcase between No. 1 and No. 2
1920 R 6 1995 1776 to 2814 1921 R 6 1795 2135 and up	Discontinued	Cylinders LOCOMOBILE—Locomobile Co. of America,
1922 R 6 1395 1923-24 production limited Number on left front frame horn	KING—King Motor Car Co., Detroit, Mich. Year Model Cyls. Price Serial Numbers	Bridgeport, Conn. Year Model Cyls. Price Serial Numbers
HUPMOBILE—Hupp Motor Car Co., Detroit,	1918 F 8 \$2150 20001-25000 1919 G 8 2350 3001 to 36378	1914 38 RD & LD 6 \$4400 48 RD & LD 6 5100
Mich. Year Model Cyls. Price Serial Numbers	1920 H 8 H-1, H-2001, H-5001	1915 38 R-5 6 4400 48 M-5 6 5100 (Decline to give
1916 N 4 \$1185 N U 4 1340	1920 Touring 8 1000 to 6000 1921 J 8 \$2725 JT1001 to	1916 38 6 4400 serial numbers) 48 6 5100 1917 38 6 4600
1917 N 4 1285 60000-87519 N U 4 1440	KF3001	48 6 4600
	1922 K 8 1795 KT-3501 up	1918 38 6 5000
N 4 1385 N U 4 1540 Number plate on dash near speedometer		1918 38 6 5000 48 6 5950 1919 38 6

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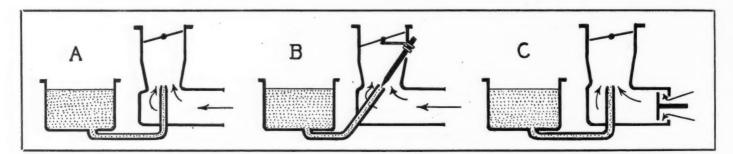
Year 1920 1921 1922 1923 1924 Number of	OBILE (Model 38 48	Cyls.	ed) Price	Serial Numbers		-Metz Co	mpany.	Walth	am Mass	NATIO	NAI - No	tional M	-4 6	
1920 1921 1922 1923 1924 Number of	38	6			37	35-3-1				Co	rp., India	anapolis.	Ind.	ar & Vehicle
1921 1922 1923 1924 Number of	48		****		Year 1918	Model 25	Cyls.	Price \$ 695	Serial Numbers	Year	Model	Cyls.	Price	Serial Number
1923 4 1924 4 Number of		6	8100	17001 and up	1919 1920	Master Six Master Six			45015-47508 50646-51527	1916	AC AD	6 12	\$1690	14001-16000
1924 Number of	48 48	6	7600	18101 up 18101 and up	Number	same as mot		er and is	found on side of	1917	AE	6	1750	16001-17000 17003-18000
	48	6	7400	18101 to 18999	1921	M-6	6	\$1995			AH AF-1	12 6		18001-20000 20001-24000
LOPE	on right side	e of dash c	olumn				Discontin				AF-2	6	2150	24001-25000
Lor	raine M			see Hackett) rand Rapids,	MITCH		chell N	lotors	Co., Racine,	1918	AK-1 AK-2 AF-3	$^{12}_{12}_{6}$	2750	25001-25550 25551-27000 27001-28000
Miel Year	Model	Cyls.	Price	Serial Numbers	Year	Model	Cyls.	Price	Serial Numbers	1919	AL AM	6 12		28001-28979 32000-32148
1920	20T	4		999 to 1999	1916	B-48 C-42	8		58000-60000 60001-64905	1920	BB	6		60000 up
Number of 1921	on dash 21T	4	\$1665	999 and up	1917	C-42	6		65001-69956	1921	Sextet (6) BB	6	2990	32149 and up
		Discontin			1917 1918	D-40 C-42	6		70000-85000 90000-95000	1922 1923	BB BB	6	2475	60001 up 63001 and up
		bohm M	otors (Co., Sandusky,	1919 1920	E-42 E-40	6		95501-96495 97001-106400	The ser	ial number		side of	the frame eithe
Year	o Model	Cyls.	Price	Serial Numbers	1020	E-42	6	1675	95501-96500	uno	ler the front	Discontin		
1918	В	6	\$1290	501-2350		F-40 F-42	6		1 and up 12001 and up		ON TO 4			
	B	6		2351-6200 6300-8299	1921	F-40	6	1790	7001 and up		oit, Mich.		Motor	Car Co., De
Number p	plate on lef	t'side engi	ne. Eng	ine number same	1922	F-42 F-50	6		12001 and up 30000 up	Year	Model	Cyls.	Price	Serial Number
Name cha	r number inged to Co				1923	F-50	6	1590	30000 and up	1918 1919	D	4		1112-1187
		Discontin	ued			on toe board		numbers	not carried under	1920	D	4	1700	1188 up 1213-1500
			Motor	Corp., Con-			Discontin	nued	*	1921 Number	D on dash	plate: engi-	1900	ber top of righ
	sville, In Model	Cyls.	Price	Serial Numbers				levoort	Engine Co.,	fro	nt crankcase	arm		or top or right
1914	65	6	\$2900	4000-6000	Ea	st Moline,	, III.					Discontin		
	77 107	6		6000-7000 9000-10000	Year 1918	Model G-50	Cyls.	Price \$2250	Serial Numbers 8331-8450			Aotors Co	rp., N	ew York, N. Y
1917	127	6	3200	10000-11000	2010	L-40	4	2000)	11000-11220	Year 1920	Model	Cyls.	Price	Serial Number
1918	127	6	3900 4300	18000 up	1919	G-50	4	2500 f 2250	8451-8999	1921	ic ·	6	3200	300-600 600 and up
	127	6		19000-19999	2010	L-40	4	2000)	11221-11600	1922 1923	3C 4C	6	2100	2000 and up
	142-151 21	6	4800 6300	20000-21000	Name of	hanged to E	& V K	2500	December, 1919.		4C r on front sp	oring 6		3000 and up
	TV .	6	6300	21000-21500	Nan	ne on dash p	late and o	n front le	eft side of engine			Discontin	ued	
1924	TV	6	5700	21500-22000 23000 and up			Discontin	nued					lotor	Car Co., Mar
1924	SV	6	2650	100 and up			itor Mo	tor Car	Co., Colum-	th	nsburg, W			
	plate on da					s, Ohio	Code	Dates	Somiol*M.	Year 1920	Model 4-30	Cyls.	Price	Serial Number 9000-9872
	N—Nord		Marmo	on Co., Indi-	Year 1920	Model M	Cyls.	Price \$1575	Serial Numbers 3316-4200	1921	430KS	4	\$1135	3040 and up
Year	Model	Cyls.	Price	Serial Numbers		on end of rig	ght side Discontin			Number	r on dash	Discontin	ued	
1914	41 48	6		114002-814000 1114002-1814000										
1915	41	6	3250	115002-815000					roe Automo-	OAKL	AND—On	kland M	otor (Car Co., Pon
	48 41	6		1215002-1815000 116002-816000	Year	e Co., Ind Model	Cyls.	Price		Year	ne, Mich. Model	Cyls.	Price	Serial Number
	34	6	2750	1516002-1816000	1919	S-9	4		16609 15599-18374	1918	34-B	6	\$1050	3000134 to
1917	34	6	3100- 5500	317002-817000	1920	S-9 S-10	4	1195) 1195	15599-18374	1919	34-B	6	1075	11644034 3000134 to
1918	34	6	3550-	418002-818000	1921	8-10	4	1295	40000 40000					11644034
1919	34	6	6500 3950-	419001-819001	1922 1923	S-11 S-10	4		18665-18989 19000 and up	1920	34-C	6		11700134 to 15970034
			5750			under hood		of dash	20000 and ap	1921	34-C	6	1395	11700134 to
1920	34	6	6450	2200001-8200001			Discontin	nued		1922	34-D	8.0	1145	15970034 11700134 to
	34 34	6	3985	2220001-12220001	MOON-	-Moon M	otor Car	r Co., !	St. Louis, Mo.	1922	6-44	6		16755034 1-44 to 1025044
1923	34	6	3185 3185		Year	Model	Cyls.	Price	Serial Numbers	1923	6-44	6		1025144 to
1924 Numbers	74	6 and of driv	3165	t and on left side	1918	6-36 6-66			36226-36996 66885-67043	1924	6-54	6	005	4115244 1-54 to 3707054
of ma	ain frame				1919	6-46 Victor 6-66	У		46001-47551	1925	6-54	6	1095	3710054 and up
Serial num	nbers run ac	ccording to	body sty	rle and not	1920	6-48	6		67044-66078 48001-49317	Number	r on frame o	pposite righ	t rear w	rheel
					1921	6-68 6-48 **	6		68101-68286 68286 and up			-Olds Mo	tor W	orks, Lansing
Det	ELL—Ma roit, Mic	eh.	naimer	m Motor Co.,	1922	6-40 VET 1	E 6	1295	40001-44748		ich.	Col	D-1	Conici Minus
Year	Model	Cyls.	Price	Serial Numbers	1923	6-58 6-40	6		58001-58474 44700 and up	Year 1918	Model 45A	Cyls.	Price \$1700	Serial Number 135277-142999
1918	25 7-1-17 8-6-17	4	\$ 655) 745	193801-239822	1923	6-58	6	1785	58500 and up					145000-149999
1010	3-1-18	4	825		1924 1924	Series A Metropolita	an 6	1195 1515		1919	37A	6		37AT1 and up 37AC1 up
	25 7-1-18 10-4-18	4	825) 895	239823-266800	1924	Newport	6	1495		1920	45B 45-B	8		45BT1 and up 45-B-T-1 and up
1920	25 7-1-19	4	895	266801 up	1924 Number	London on dash	0	1985		1921	43A	4	1445	7 to 10786
1921	7-12-19 25	4	985) 845	329691 and up			Motor T	Zehiel.	Co. Donnetti		47 46	8		1 to 1990 49 to 625
1922	25	4	885	341708-388529	MOORI		MUIUT V	entere	Co., Danville,	1922	46	8	1735	
1924	25C	4	895	388530 444232 to 492824	Year	Model	Cyls.	Price	Serial Numbers		47 42A	8	1595 1145	
1925	25C	d side of 1	895	492825 and up eat and rear right	1919	30	4	\$ 895	1600) 7000}8149	1923	. 43A	4	975	43AT1 and up
hand	frame hor	or sine of or	iiver s se	sat and rear right	1000		4	1095	8000	1923 1924	47 30	8		47T1 and up 30T-1 and up
MERCE	R_Mars	or Anto	mobile	Co., Trenton,	1920 Number	30 under hood	on right si		8150 up ly, engine number	Numbe	rs on plate of	n body sill s	at right	of the boards.
N. J	J.		TOULE			right side of	engine		o, cogaio attimost		to body st		cutive (order, but accord
Year 1916	Model 22-72	Cyls.	Price	Serial Numbers 2550-3299			Discontin	nued					tore f	Corp., Pontiac
1917	22-73	4	3500	3300-4099 1					osha, Wis.		ich.	rend MO	.ors (orps, rentiat
	Series 4	4	4200	4100-4600	Year	Model. 681-685	Cyls.	Price	Serial Numbers	Year	Model	Cyls.	Price	Serial Number
1919	Series 5	4	4200	4600 up	1918			41989	94501 and up 94635 and up 1	1920 Serial n	umber on da		\$1585	6000-
1920	Series 5	4	4500	9001 and up	1919	681-687	6	1395	94635 and up 94501 and up	Correct II	amber on da	Discontin	nued	
1921	Series 5	4	4500	12000-16500	1920	681-687	6	1595	113661 and up	OVER	LAND_Y	Villys-Ov	erland	Inc., Toledo
1923	Series 5 Series 5	4		16500-19640 19641 and up	1921 1921	681-687 41-45	6	1545	167177 and up 1000 and up	0	hio			
1923	Series 6	6	3750	20240-20258	1922	691-697	6	1390	195754 and up					any data of th
Number of	Series 6 on right has	6 nd rear spr	4500	21000 and up	1922 1923	41-46 691-698	6	985	4511 and up 218364 and up	lan	d, Inc., Tole	edo, Ohio	tion, w	rite Willys-Ove
The second second					1923	41-48	4	935	19436 and up	-	N-MAGNE		ke- F	A 1. C-
	R—Mete a, Pa.	or Moto	rs, Ir	ne., Philadel-	1924 1924	691-698	6	1240	240423 and up 34577 and up		N-MAGNE leveland,		Ker f	t. & L. Co
phi	Model	Cyls.	Price	Serial Numbers	1924	41-49 Advanced	6	1375	288001 and up	Year	Model	Cyls.	Price	Serial Number
Year		and the same												
Year 1920	B	A	\$5000	625 and up	1925 On the	Special mode	6	1095	51001 and up	1917	M-25	6		1301-1799
Year 1920 Number a		A	\$5500		On the secu	6-cyl. mode	els the nu	1095 umbers of tyles	51001 and up do not run con- t back of radiator	1917 1918-19 1918-19	O-36		3950 5500	1301-1799 501-1299 1800

PACKA									-					
		kard Mo	otor Car C	o., Detroit,				ce-Arro	ow Motor Car		(Continu			
Year	ich. Model	Cyls.	Price Se	erial Numbers	Year	Model	N. Y. Cyls.	Price	Serial Numbers	Year 1920	Model T-6	Cyls.	Price 1750	Serial No.
1914	1-38	6	\$4150 380	00-42000	1914	38-C2	6		34101-34603 and	1921	T-6			
	48 2-38	6	4850 500 3350 530			48-B2	6	5000	34047 11201-12100 and	1922 1923	T-6 T-6	6	1595	37800-4950 49500 and
1018	48		630	26-66000					11100	1924	T-6	6	1595	64504 to 7
1915	3-38 5-48	6	3750 750 4850 780		1915	66-A2 38-C3	6		66900-66964 34701-35450	1925 1924	T-6 Speed W.	6		75850 and 99001 to 1
1916	{1-25	12	2750 800	26-87787		48-B3 66-A3	6		12301-13050 67050-67150	1925	Speed W.	4	1185	113841 an
	1-35 2-25	12 12	125	051-150000	1916	38-C3	6	4300	35601-36350	Number	on right for	rward end d	or sub ire	ame
1916	2-35 2-25	12 12	3050)			48-B3 66-A3	6		13051-13650 67050-67150		RE-Rev	ere Moto	ors Co.	, Logan
1917	2-35	12	3500			38-C4	6	4300	36601-37605	In		Cula	Dulas	Conicl M.
1918	3-25 3-35	12 12	3700 150 4100	051 up		48-B4 66-A4	6		13901-14900 67201-67405	Year 1920	Model C-D	Cyls.	Price \$4250	Serial N
1919	3-25	12	3950		1917	38-C4	6	4300	37701-38701	1921 1922	C	4	4650	1600 1652
1920	3-35 Twin Six	12	4300 J	130-165662		48-B4 66-A4	6		15001-16000 67499-67800	1923	M	4	3200	1600-1653 1660 and
Number	r on right fron	at leg of m	notor		1918	48-B4	6	5000	16001-16400	1924 Number	M on left side	front aross		1667 and
1921	Single Six Twin Six	6 12	\$2975 U26 6000 S20	0000 and up	1919	48-B5 48 H. P.	6		16401-17400 511001-513300					
1922	126-133	6	2485 U90	000 to 36999		38 H. P.	6	7250	311001-312375		ENBACKI ., Detroit		ickenb	acker I
Number	Twin Six r on plate on o	12 dash direc	3850 S21 etly back of	change speed	1920	38 48	6		313001-314500 514001-515700	Year	Model	Cyls.	Price	Serial N
leve	er			000 to 36999	1921 1922	33	6	7500	321001-322999	1922 1923	A B	6	\$1485	1-5000
1923 1923	126-133 136	6 8	3650 200	0000 and up		beneath left		0200 T	331001 and up	1923	C	6		5001-1359 13596-197
1924 1924	126-133 136-143	6		00 and up	1923 1924	33 33	6		336001 and up	1924	A-8	8		25001-269
Number	r on plate at le	eft rear si	de of dash	ooo and up	1924	80	6	2895	336001 and up 801001 and up		on plate at			
-				n Co Do	1924 1925	33 80	6	5250	336001 and up 801001 and up		ER-Roa		tor Ca	r Co., 1
	E—Paige-D oit, Mich.	etroit !	MOTOR CH	1 (d., De-	Number	on plate bel	ow driver'	s seat		Year	Model	Cyls.	Price	Serial N
Year	Model	Cyls.	Price Se	erial Numbers		rs are not allo series	otted on a	yearly be	asis but according	1916	All			10500-135
1916-18	46 38	6	\$1375 656 1090 850							1917 1918	All All	6 4 & 6	3	13501-157 13751-169
1917-18	39		1330 899	24-101999	PILOT Year	Model M	otor Car Cyls.	Price	Serial Numbers	1919 1921	All 654-E	6		16971 up
918	39 39	6	1395 102 1690 102	2001 up	1918	6-45	6	\$1295	3000-3575	Number	on dash bo	ard	\$2000	
917-18	51	6	1495 700	000-74999	1919 Number	6-45 on left fram	e horn	1650	3575 up	1922	6-54E 4-75E	6	2585	23020-246 23020-246
919	55 55	6	2060 820		1920	6-45	6		4380-5044	1923-24	6-54E	6	2485	20020-240
Turnshan	55 r plate under l	6	2165 820		1921	6-45 6-50	6	$\frac{1895}{2285}$		1923-24 Serial n	475-E umbers do r	ot run cons	3485	v
920	15-19	6	\$1595 200	0000 and up	1922	6-45	6		5189-5300		on front ri			,
lovial as	M-18	mbers are	2195 118	3000 and up the left side	1923	6-50 6-50	6		6200-6499 6500 and up	BOCK	FALLS-	Rock F	alls M	fg. Co
of n	motor				Number	on left fron		orn		lir	ng, Ill.	aroum 1		2g. 00i,
1921	6-42 6-66	6		1903-217507 3314-130948			Discontin			Year 1920	Model 12	Cyls.	Price	Serial N
922	6-44	6	1465 217	7480 up	PORT	ER—Ame	rican &	Britis	h Mfg. Corp.,	Number	over motor	6 r's manufac	turing p	12001 and late
1923	6-66 6-70	6	2245 130 2450	1950 up .	Year	ridgeport, Model	Cyls.	Price	Serial Numbers			Discontin	nued	
1924	6	6	1895		1919-20		4	\$6750	110-519		ROYCE		Royce	of Am
Number	r under right l	hand from	t seat		1921	r on right has	nd front sp	\$6750	519 and up .	Year	ringfield, Model	Mass. Cyls.	Price	Serial N
PAN-A	AMERICAN	V — Par	n-America	an Motors		*	Discontin	nued		1922-25	40-50	6	\$10900	
	orp., Decati		m : a		PREM	IER—Pre	mier Mo	tor Co	rp., Indianap-	Serial	numbers s	trictly con	ifidential	; refer i
Year 1918	Model E-6-48	Cyls.	Price Se \$1800 500	erial Numbers 0-1200	Year	is, Ind. Model	Cyls.	Price	Serial Numbers	Number	on plate or	n dashboard	d	
Number 1919	r on frame hor E-6-48	rn .			1917	6-B	6	\$3200	10001-2912	SAXO	N—Saxon	Motor	Car C	orp., De
1010	F-6-48	6	300	00-3322	1918 1919	6-C 6-C	6	3200	3501-4511		ich.	0.1.	n :	0 1 1 1 1
1920	G-6-48 E-6-55	6	2250 300	00 and up	1920 1921	6-D 6-D	6	4600	5011 and up 6250 to 6790	Year 1918	Model Y-18-R	Cyls.	Price \$1195	Serial N 101
	r on left front	spring ha	anger	· ·	1922	6-D	6	3100	6800 to 6845	1919	Y-18-T	6	1195	1201
		Discontin		-	1923 1924	D 6-D	6	9025	6845 and up 8001 to 8099		Y-18-T Y-18-R	6	1295	7650 up 1031 up
PATE	RSON—W.	A. P	aterson	Co., Flint,	Numbe	r under from	t cushion	on left B	ide right of start-	1920 Number	125 on top of	the left has	1195	90001 and
TANK	Model												nd frame	
Year		Cyls.		erial Numbers	AACUA	nger			nd on front spring	rad	iator			
Year 1918-19	6-46	6	686	69-9504	Early in	nger n 1924 the r	nanufactui	ring of I	Premier passenger			4 Disconti	\$1495	
Year 918-19	6-46 6-47	6	0 0.0686 0.0686 0.0686 0.0686 0.0686	69-9504 01 up 101 up	Early is car bui	nger n 1924 the r s was stoppe lding of taxio	nanufactured and the	ring of I plant w sively	Premier passenger as devoted to the	1921 rad	iator 125	Discontin	\$1495 nued	
Tear 918-19 920	6-46	6	\$2100 150	69-9504 01 up 101 up 00 and up	Early in	nger n 1924 the r s was stoppe lding of taxio 4-A Taxi	nanufactured and the	ring of I plant w sively \$2400	Premier passenger as devoted to the T0307 to T2000	1921	iator	Discontin	\$1495 nued	o., Cinci
rear 918-19 920 921	6-46 6-47 6-50 6-50 6-50	6 6 6 6	$egin{array}{lll} & \dots & 686 \\ & \dots & 120 \\ & 121 \\ \$2100 & 150 \\ & 1925 & 150 \\ & 2895 & 180 \\ \hline \end{array}$	69-9504 01 up 101 up	Early is car bui	nger n 1924 the r s was stoppe lding of taxio	nanufactured and the	ring of I plant w sively \$2400	Premier passenger as devoted to the	1921 SAYE	RS—Saye	Discontin	\$1495 nued ville C	o., Cinci Serial N
Year 918-19 920 921 922 923	6-46 6-47 6-50 6-50 6-50 6-52 6-52	6 6 6 6 6	\$2100 150 1925 150	69-9504 01 up 101 up 00 and up 000-15690	Early in car build 1924 PREM	nger n 1924 the r s was stoppe ilding of taxi 4-A Taxi 4-B Taxi	nanufactur d and the cabs exclus 4 4 reston	ring of I plant w sively \$2400 2400	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314	1921	RS—Saye hio Model P A-P)	Discontin	\$1495 nued ville C	o., Cinci
Year 918-19 920 921 922 923	6-46 6-47 6-50 6-50 6-50 6-52	6 6 6 6 6 6 6 6	\$2100 150 1925 180 2895 180 1390	69-9504 01 up 101 up 00 and up 000-15690	Early in car build 1924 PREM	nger n 1924 the r s was stoppe llding of taxi 4-A Taxi 4-B Taxi IOCAR—P ingham, A	nanufactured and the cabs exclused 4 4 4 reston	ring of I plant w sively \$2400 2400	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314	rad 1921 SAYE OI Year 1918 1919	RS—Saye hio Model P A-P B-P	Discontinues & Secondary Cyls.	\$1495 nued ville C Price \$1695 1745	Serial N 5100-5300 5301-5700
7ear 918-19 920 921 922 923 Number	6-46 6-47 6-50 6-50 6-50 6-52 6-52 r on left side o	6 6 6 6 6 6 of seat Discontin	\$2100 150 1925 150 2895 180 1550 1390	39-9504 11 up 101 up 10 and up 100-15690 101 and up	PREM Year 1921	nger n 1924 the r s was stoppe llding of taxic 4-A Taxi 4-B Taxi IOCAR—P ingham, A Model 6-40A	reston Cyls.	ring of I plant w sively \$2400 2400 Motor Price \$1295	Premier passenger ras devoted to the T0307 to T2000 T2001 to T2314	rad 1921 SAYEI OI Year 1918 1919 1920	RS—Saye hio Model P A-P B-P C-P D-P	Discontinues & Secondary Cyls.	\$1495 nued ville C Price \$1695 1745 2095 2195	Serial N 5100-5300 5301-5700 5701-6000 6001-6600
7ear 918-19 920 921 922 923 Number	6-46 6-47 6-50 6-50 6-50 6-52 7 on left side of	6 6 6 6 6 6 of seat Discontin	\$2100 150 1925 150 2895 180 1550 1390	69-9504 01 up 101 up 00 and up 000-15690	PREM Year 1921 1922	nger n 1924 the r s was stoppe lding of taxid 4-A Taxi 4-B Taxi 4-B Taxi IOCAR—P ingham, A Model 6-40A 6-40	nanufactured and the cabs exclused 4 4 4 4 4 4 Creston Lia. Cyls. 6 6	ring of I plant w sively \$2400 2400 Motor Price \$1295 1095	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314 Corp., Bir-Serial Numbers	rad 1921 SAYE OI Year 1918 1919 1920 1921	RS—Saye hio Model P A-P B-P C-P D-P D-P	Ts & Seo Cyls. 6 6 6 6	\$1495 nued ville C Price \$1695 1745 2095 2195 2195	Serial N 5100-5300 5301-5700 5701-6000 6001-6600 6350-7000
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7ear 918-19 920 921 922 923 Number 921 926 918 919 920 920 920 921 921 922	6-46 6-47 6-50 6-50 6-52 6-52 r on left side of RLESS—Pec and, Ohio Model Series 1 Series 2 & 3 Series 4 Series 5 Series 6 916 series moder on dash 56-S-7	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 8 8 8 8	\$2100 150 1925 150 2895 180 1550 1390 mued **Interpretation of the control of th	ig-9504 Di up Di up Di up Di and up	Early in carriage of the carri	nger in 1924 the r s was stoppelding of taxis 4-A Taxi 4-B Taxi 4-	nanufacturd and the cabs exclus 4 4 reston lin. Cyls. 6 6 Discontinhern Mo Cyls. 4 Discontinhern Mo Cyls. 7 Lin. Cyls. 8 Lin. Cyls. 1 Lin. Lin. Lin. Lin. Lin. Lin. Lin. Lin.	ring of I plant w sively \$2400 2400 Motor Price \$1295 1095 nued otor Mi Price inued & V. 1	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314 Corp., Bir-Serial Numbers 1g. Co., Hous-Serial Numbers 1001-13000 Knight Motor	rad 1921 SAYE 00 Year 1918 1919 1920 1921 1923 Number SCRIH Year 1918	RS—Saye hio Model P A-P B-P C-P D-P D-P D-P D-P T on cowl un PS-BOO'l oit, Mich Model G H r plate on h	TH—Scrip Cyls. 6 6 6 6 6 6 6 Cyls. 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	\$1495 nued ville C Price \$1695 1745 2095 2195 2195 1695 1695 nued Price \$1065 \$1065 \$21065 \$2105 \$2	Serial N 5100-5300 5301-5700 5701-6000 6350-7000 7001-7100 7101-7413 oth Corp Serial N 801-1800 2-325 dd seat
7 (ear 918-19 920 921 922 923 Number 1916 9917 918 919 920 Since 19 Number 921 922 923 924	6-46 6-47 6-50 6-50 6-52 6-52 r on left side of KLESS—Pee and, Ohio Model Series 1 Series 2 & 3 Series 4 Series 5 Series 5 Series 6 916 series model or on dash 56-S-7 66 66	6 6 6 6 6 6 6 6 6 6 6 8 1 Discontineerless M Cyls. 3 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		ig-9504 b)1 up 101 up 101 up 101 up 102 and up 103 and up 104 ig-9690 105 and up 106 ig-9690 107 ig-9690 108 ig-9690 109 ig-96	Early in car car large l	nger in 1924 the r s was stoppelding of taxis 4-A Taxi 4-B Taxi 4-B Taxi IOCAR—Pingham, A Model 6-40 6-40 6-40 6-40 EER—Sout n, Texas. Model A-20 V. KNIGH	manufactured and the cabs exclused 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	ring of I plant w sively \$2400 2400 Motor Price \$1295 1095 nued Price inued & V. 1 III. Price \$3150	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314 Corp., Bir-Serial Numbers Gg. Co., Hous-Serial Numbers 1001-13000 Knight Motor Serial Numbers 20000-20700	rad 1921 SAYE 00 Year 1918 1919 1920 1921 1923 Number SCRIH Year 1918	r saye RS—Saye Model P A-P B-P C-P D-P D-P D-P D-P T on cowl ur PS-B007 oit, Mich Model G H r plate on h 6-39 6-40	Disconting Section 1. Cyls. Cyls. 6 6 6 6 6 6 6 Cyls. Cyls. Cyls. Cyls. 4 8	\$1495 nued Price \$1695 1745 2095 2195 2195 1695 1695 nued Price \$1065 1285 right han \$1295	Serial N 5100-5300 5301-5700 6001-6600 6350-7000 7001-7100 7101-7413 oth Corp Serial N 801-1800 2-325 d seat 9001-1159 9002-1159
Year 918-19 920 921 922 923 Number 916 917 918 920 921 921 922 923 924 924	6-46 6-47 6-50 6-50 6-50 6-52 6-52 r on left side of the series 1 Series 2 & 3 Series 5 Series 5 Series 6 916 series model of the series 5 9-16 series model of the series 6 9-16 series model of the series 6 9-16 series 6	6 6 6 6 6 6 6 6 6 8 8 8 8 8 8 8 8 8 8 8	\$2100 1500 1925 150 2895 180 1550 1390 mued **Total Price S \$1890 160 1890 160 1890 160 1890 160 1890 160 1890 170 2340 230 2900 260 170 170 170 170 170 170 170 170 170 17	ig-9504 1) up 101 up 101 up 101 up 102 and up 103 and up 104 ig-9620 105 ig-9620 106 ig-9620 107 ig-96	Early in car part of the car p	nger in 1924 the r s was stoppelding of taxis 4-A Taxi 4-B Taxi 4-B Taxi IOCAR—Pingham, A Model 6-40 6-40 6-40 6-40 EER—Sout n, Texas. Model A-20 V. KNIGI o., East M Model J J	nanufactured and the cabs exclused 4 4 reston tla. Cyls. 6 6 Discontinhern Mo Cyls. 4 Discontinhern Mo Cyls. 6	ring of I plant w sively \$2400 2400 Motor Price \$1295 1095 nued Price inued & V. I III. Price \$3150 3350	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314 Corp., Bir-Serial Numbers Serial Numbers 1001-13000 Knight Motor Serial Numbers 20000-20700 207010-2000	rad 1921 SAYE 00 Year 1918 1919 1920 1921 1923 Number SCRIH Year 1918	RS—Saye hio Model P. A-P B-P C-P D-P D-P D-P T on cowl un PPS-BOO'l oit, Mich Model G H r plate on h 6-39 6-40 6-41	Discontinues & Secondary & Secondary & Secondary & Secondary & Cyls. Cyls. 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	\$1495 nued Price \$1695 1745 2095 2195 2195 1695 nued Price \$1065 1285 ight han \$1295 1295 1295	Serial N 5100-5300 5301-5700 5301-5700 6001-6600 6350-7000 7001-7413 6th Corp Serial N 801-18 N 801-18 N 9002-325 d seat 9002-1159 9002-1159 11432-115
(ear 918-19 921 922 923 youmber 916 9917 918 9919 920 since 19 youmber 921 922 923 924 924 924 youmber 924 924 youmber	6-46 6-47 6-50 6-50 6-50 6-52 6-52 r on left side of the series of the s	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 8 8 8 8	\$2100 150 \$2100 150 1925 150 2895 180 1550 1390 nued Lotor Car Price \$\$1890 160 1890 170 2340 236 2900)260 2790 271 2990 271 2990 270 2750 288 2990 328 2485 299 aed to dash	13-9504 101 up 101 up 101 up 100-15690 1001 and up 1000-273687 1000-273787 1 and up 1000-273787 1 and up 1000 and up 1000 and up 1000 and up 1000 and up	Early in car buil 1924 PREM m Year 1921 1922 1923 RANG to Year 1920 Year 1920 1921 1921 1921 1921	nger in 1924 the r s was stoppelding of taxis 4-A Taxi 4-B Taxi 4-B Taxi IOCAR—Pingham, A Model 6-40 6-40 6-40 EER—Sout n, Texas. Model A-20 V. KNIGI D., East M Model J R J J R J	nanufactured and the cabs exclused 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	ring of I plant w sively \$2400 2400 2400 Motor Price \$1295 1095 nued Price inued & V. I III. Price \$3150 2350 2750	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314 Corp., Bir-Serial Numbers 1001-13000 Knight Motor Serial Numbers 1001-21000 20701-21000 50000-50700 21001-21099	rad 1921 SAYE: OI Year 1918 1919 1920 1921 1922 1923 Number SCRIH tr Year 1918 Number	rs—Saye hio Model P A-P B-P C-P D-P D-P D-P D-P T on cowl un PS-BOO'l oit, Mich Model G H r plate on h 6-39 6-40 6-41 6-42 r plate on ser	Ts & Seo Cyls. 6 6 6 6 6 6 Cyls. Cyls. Cyls. 4 Cyls. 4 8 eel board, r 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	\$1495 nued ville C Price \$1695 1745 2095 2195 2195 1695 1695 nued Price \$1065 1285 right han \$1295 1295 1295 1295 1295 1295 1295 1295	Serial N 5100-5300 5301-5700 5701-6000 6350-7000 7001-7100 7101-7413 oth Corp Serial N 801-1800 2-325 dd seat 9001-1159 9002-1159 11432-115 11434-115 at seat cusl
(ear 918-19 920 921 922 923 Number 1816 9917 918 919 920 Since 19 Number 1921 922 923 924 924 924 Number Nu	6-46 6-47 6-50 6-50 6-50 6-52 6-52 r on left side of the series of the s	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 8 8 8 8	\$2100 150 \$2100 150 1925 150 2895 180 1550 1390 nued Lotor Car Price \$\$1890 160 1890 170 2340 236 2900)260 2790 271 2990 271 2990 270 2750 288 2990 328 2485 299 aed to dash	ig-9504 1) up 101 up 101 up 101 up 102 and up 103 and up 104 ig-9620 105 ig-9620 106 ig-9620 107 ig-96	Early in carriage in the carri	nger in 1924 the r is was stoppelding of taxis 4-A Taxi 4-B Taxi 4-B Taxi IOCAR—Pingham, A Model 6-40 6-40 6-40 6-40 EER—Sout n, Texas. Model A-20 V. KNIGI D., East M Model J J R	nanufactured and the cabs exclused 4 4 reston Lia. Cyls. 6 6 Discontine hern Mo Cyls. 4 Discontine HT—R. foline, 1 Cyls. 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	ring of I plant w sively \$2400 2400 Motor Price \$1295 1095 nued Price sinued & V. I III. Price \$3150 3350 2150 2750 1850	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314 Corp., Bir-Serial Numbers Serial Numbers 1001-13000 Knight Motor Serial Numbers 20000-20700 20001-21900 50701-21999 50701-50999	rad 1921 SAYE 00 Year 1918 1919 1920 1921 1922 1923 Number SCRIH tr Year 1918	RS—Saye hio Model P- B-P B-P D-P D-P D-P D-P T on cowl un PPS-BOO' oit, Mich Model G H r plate on h 6-39 6-40 6-41 6-42 r plate on se G	TH—Scrip. Cyls. 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	\$1495 nued Price \$1695 1745 2095 2195 2195 1695 1695 nued Price \$1065 1285 right han \$1295 1295 1295 1295 1295 1295 1295 1285 1385 1385 1385 1385 1385	Serial N 5100-5300 5301-5700 6001-6600 6350-7000 7001-7100 7101-7413 oth Corp Serial N 801-1800 2-325 d seat 9001-1159 9002-1159 11432-115 11434-115 t seat cusl
Year 1918-19 920 921 922 923 Number PEER 1916 9917 9918 9919 9920 Since 19 Number 1921 1922 1924 1924 Number Number Number Section 1921 1924 1924 Number Section 1921 1924 Number Section 1921 1924 Number Section 1921 1924 1924 Number Section 1921 1924 1924 Number Section 1921 1921 1921 1921 1921 1921 1921 192	6-46 6-47 6-50 6-50 6-50 6-52 f-52 r on left side of Model Series 1 Series 2 4 Series 5 Series 5 Series 6 916 series moder on dash 56-S-7 56-S-7 66 67 70 r on metal plasers run accordatively	6 6 6 6 6 6 6 6 6 6 8 8 8 8 8 8 8 8 8 8	\$2100 1500 1925 180 18925 180 1390 1390 mued **Trice S \$1890 160 1890 170 2340 230 2900 260 1890 170 270 2750 288 2990 322 2485 296 and to dashoody styles,	19-9504 10 up 10 up 10 up 10 and not con-	Early in car in 1924 PREM ma Year 1921 1922 1923 RANG to Year 1920 R. & Co Year 1920 1921 1921 1922 1923	nger in 1924 the r s was stoppelding of taxis 4-A Taxi 4-B Taxi 4-B Taxi IOCAR—Pingham, A Model 6-40 6-40 6-40 V. KNIGI D., East Model J R J R J R	nanufactured and the cabs exclused 4 4 reston tla. Cyls. 6 6 Discontine HT—R. Ioline, 1 Cyls. 6 4 6 6 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6	ring of I plant w sively \$2400 2400 Motor Price \$1295 1095 1095 nued Price \$111. Price \$3150 2150 2150 2150 24755 1665	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314 Corp., Bir-Serial Numbers Numbers 1001-13000 Knight Motor Serial Numbers 20000-20700 20701-21000 50000-50700 21001-21999 50701-50999 22000-22050 51000-52000	rad 1921 SAYE: OI Year 1918 1919 1920 1921 1922 1923 Number SCRIH tr Year 1918 Number Number Number	RS—Saye hio Model P-P B-P D-P D-P D-P D-P T on cowl un PPS-BOOT oit, Mich Model G H r plate on h 6-39 6-40 6-41 6-42 r plate on se G 6-39 r plate on r g r plate on r g r plate on r g r plate on r	TH—Scrip Cyls. 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	\$1495 nued Price \$1695 1745 2095 2195 2195 1695 1695 1695 1285 1285 1285 1285 1285 1285 1285 128	Serial N 5100-5300 5301-5700 6001-6600 6350-7000 7101-7413 600 6350-7000 7101-7413 600 6350-7000 6350-7000 6350-7000 6350-7000 6350-7000 6350-7000 6350-7000 6350-7000 6350-7000 6350-7000 6350-7000 6350-7000 6350-7000 6350
Year 918-19 920 921 922 923 Number 916 917 918 919 920 Since 19 Number 1921 922 923 924 924 Number 924 Number second PIEDM	6-46 6-47 6-50 6-50 6-50 6-52 6-52 6-52 r on left side of the series 1 Series 2 & 3 Series 4 Series 5 Series 6 916 series mode or on dash 56-S-7 66 67 70 or on metal plasers run accordentively MONT—Pleynchburg,	6 6 6 6 6 6 6 6 6 6 8 2 Discontine erless M Cyls. 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	\$2100 150 1925 150 2895 180 1550 1390 nued Iotor Car Price S \$1890 160 1890 170 2340 230 2900 260 16 yearly m \$2990 270 2790 271 2790 271 2750 288 2990 322 2485 299 aed to dash nody styles,	13-9504 101 up 101 up 101 up 100-15690 1001 and up 1000-273687 1000-273787 1 and up 1000-273787 1 and up 1000 and up 1000 and up 1000 and up 1000 and up	Early in carriage of the carri	nger in 1924 the r is was stoppelding of taxis 4-A Taxi 4-B Taxi 4-B Taxi IOCAR—Pingham, A Model 6-40 6-40 6-40 EER—Sout n, Texas. Model A-20 V. KNIGI D., East M Model J J R J R J R J R H	nanufactured and the cabs exclused 4 4 reston Cyls. 6 6 Discontine HT—R. foline, 1 Cyls. 6 6 6 6 4 6 6 4 6 4 6	ring of I plant w sively \$2400 2400 Motor Price \$1295 1095 nued Dtor Mil. Price \$3150 3350 2750 1850 2475 1665 2850	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314 Corp., Bir-Serial Numbers 1001-13000 Knight Motor Serial Numbers 20000-20700 20701-21000 50000-50700 20701-21999 50701-21999 50701-20999 22000-22050	rad 1921 SAYE: OI Year 1918 1919 1920 1921 1922 1923 Number SCRIH tr Year 1918 Number Number Number	RS—Saye hio Model P A-P B-P C-P D-P D-P D-P D-P T on cowl ur PS-BOO' oit, Mich Model G H r plate on h 6-39 r plate on r 6-49 r plate on r 6-39 r plate on r 6-40 6-41 6-42	rs & Seo Cyls. 6 6 6 6 6 6 6 6 Cyls. 7 8 8 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	\$1495 nued Price \$1695 1745 2095 2195 1695 1695 nued Price \$1065 1285 1285 1285 1285 1285 1285 1285 128	Serial N 5100-5300 5301-5700 5301-5700 6001-6600 6350-7000 7001-7100 7101-7413 oth Corp Serial N 801-1800 2-325 d seat 9001-1159 9002-1159 11432-115 at seat cusl 11601-3000 11600-187
Year 1918-19 920 921 922 923 Number PEER 1916 9917 9918 9919 9920 Since 19 Number 1921 922 923 924 1924 1924 Number Number Sect PIEDM Year	6-46 6-47 6-50 6-50 6-50 6-52 6-52 r on left side of the series 1 Series 2 Series 5 Series 6 916 series moder on dash 56-S-7 56-S-7 66 67 70 er on metal plasers run accordentively MONT—Pichburg, Model MONT—Pichburg, Model	6 6 6 6 6 6 6 6 6 6 8 2 Discontine erless M Cyls. 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	\$2100 150 1925 150 2895 180 1550 1550 nued Iotor Car Price S \$1890 160 1890 170 2340 230 2900 260 10 f yearly m \$2990 270 2790 271 2790 271 2790 273 2990 322 2485 299 aed to dash pody styles, Motor Price S	139-9504 10 up 10 up 10 up 10 and up	Early in car builded by the car builded by the car bear builded by the car builded by the car bear builded by the car bear builded by the car builded by the ca	nger in 1924 the r is was stoppelding of taxis 4-A Taxi 4-B Taxi 4-B Taxi IOCAR—Pingham, A Model 6-40 6-40 6-40 EER—Sout n, Texas. Model A-20 V. KNIGI D., East M Model J J R J R J R J R H	nanufactured and the cabs exclused 4 4 reston Lia. Cyls. 6 6 Discontin hern Mo Cyls. 4 Discontin HT—R. foline, 1 Cyls. 6 6 4 6 4 6 4 6 ash or on	ring of I plant w sively \$2400 2400 Motor Price \$1295 1095 nued Price \$3150 2750 2475 1665 2850 right or	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314 Corp., Bir-Serial Numbers Ig. Co., Hous-Serial Numbers 1001-13000 Knight Motor Serial Numbers 20000-20700 20701-21000 50000-50700 21001-21999 50701-50999 22000-22050 51000-52000 22051-22450	rad 1921 SAYE: OI Year 1918 1919 1920 1921 1922 1923 Number SCRIH tr Year 1918 Number Number Number	iator 125 RS—Sayehio Model P-P. B-P D-P D-P D-P D-P D-P D-P T on cowl un PPS-BOO' oit, Mich Model GH H r plate on h 6-39 6-40 6-41 6-42 r plate on r 6-40 6-41 6-42 r plate on r 6-40 6-41 6-42 r plate on r 6-40 6-41 6-42	Trace Secondary	\$1495 nued Price \$1695 1745 2095 2195 2195 1695 1695 nued Price \$1065 1285 1285 1285 1295 1985 1985 1985 1985 1985 1985 1985	Serial N 5100-5300 5301-5700 5701-6000 6001-6600 6350-7000 7101-7413 oth Corp Serial N 801-1800 2-325 d seat 9001-1159 9002-1159 11432-115 at seat cusl 1801-3000 11600-187 11600-124
Year 1918-19 1920 1921 1922 1923 Number PEER 1917 1918 1919 1919 1919 1920 1919 1922 1924 1924 1924 1924 1924 1924	6-46 6-47 6-50 6-50 6-50 6-52 6-52 r on left side of the series 1 Series 2 & 3 Series 5 Series 5 Series 6 916 series moder on dash 56-S-7 66 66 67 70 r on metal plasers run accordutively MONT—Pley Model 4-30 6-40	Cyls. 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	\$100 150 1925 150 2895 180 1550 1390 mued **Total Control Con	19-9504 10 up 10 up 10 up 10 and up	Early in carriage in the carri	nger in 1924 the r is was stoppelding of taxis 4-A Taxi 4-B Taxi 4-B Taxi 4-B Taxi IOCAR—Pingham, A Model 6-40 6-40 6-40 V. KNIGI O., East Model J R J R J R J R J R J R H H r plate on d tor	nanufactured and the cabs exclused 4 4 reston tla. Cyls. 6 6 Discontin hern Mo Cyls. 4 Discontin HT—R. 1 Cyls. 6 4 6 4 6 4 6 6 ash or on Discontin	ring of I plant w sively \$2400 2400 Motor Price \$1295 1095 1095 nued Price \$1295 nued Price \$1295 nued \$4 V. I III. Price \$3150 3350 2475 1850 2475 1665 2850 right or inued	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314 Corp., Bir-Serial Numbers Serial Numbers 1001-13000 Knight Motor Serial Numbers 20000-20700 21001-21999 22000-22050 50701-50000 22051-22450 left hand side of	rad 1921 SAYE: Oi Year 1918 1919 1920 1922 1923 Number 1928 Number 1918 Number 1919 Numbe	iator 125 RS—Saye hio Model P-P A-P B-P C-P D-P D-P D-P T on cowl un PPS-BOOT oit, Mich Model G H r plate on h 6-39 6-40 6-41 6-42 r plate on r 6-40 6-41 6-42 r plate on r 6-40 6-41 6-42 r plate on r 6-40 6-41 6-42 A-41 A-42	TH—Serij Cyls. Cyls. 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	\$1495 nued Price \$1695 1745 2095 2195 2195 1695 1695 nued Price \$1065 1285 1285 1285 nder fror \$1095 1295 1295 1295 1295 1295 1295 1295 12	Serial N 5100-5300 5301-5700 6001-6600 6350-7000 7001-7101 801-1800 2-325 d seat 9002-1159 9002-1159 11432-115 11434-115 at seat cusl 1801-3000 11600 11600-124
Year 1918-19 1920 1921 1922 1923 Number PEER) 1916 1917 1918 1919 1919 1920 Since 19 Number 1921 1924 1924 1924 1924 1924 Number	6-46 6-47 6-50 6-50 6-50 6-52 6-52 r on left side of the series 1 Series 2 & 3 Series 4 Series 5 Series 6 916 series mode of the series 1 56-S-7 66 67 70 er on metal play remained by the series 1 series with series for the series f	6 6 6 6 6 6 6 6 6 6 6 8 8 8 8 8 8 8 8 8	## 168 1925 150 ## 168 1925 150 ## 168 1925 150 ## 168 1550 ## 179 150	13-9504 101 up 101 up 100 and up 100-15690 1001 and up 10000-273687 1000-273787 1 and up 1000-273787 1 and up 1000 and up	Early in carriage	nger in 1924 the r s was stoppelding of taxis 4-A Taxi 4-B Taxi 4-	nanufactured and the cabs exclused 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 6 4 4 6 6 4 4 6 6 4 6	ring of I plant w sively \$2400 2400 Motor Price \$1295 1095 1095 nued Otor Mi Price \$3150 3350 2150 2150 1850 2475 1665 2850 right or inued Co., L	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314 Corp., Bir-Serial Numbers 1001-13000 Knight Motor Serial Numbers 20000-20700 20701-21000 50000-50700 21001-21999 50701-50999 22000-22050 51000-52000 left hand side of ansing, Mich.	rad 1921 SAYE: OI Year 1918 1919 1920 1921 1922 1923 Number SCRIH tr Year 1918 Number Number Number	iator 125 RS—Sayehio Model P- A-P B-P C-P D-P D-P D-P D-P T on cowl ur PS-BOO' oit, Mich Model GH r plate on h 6-39 r plate on se G 6-39 r plate on r 6-42 A-41 A-42 B-39	Cyls. 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	\$1495 nued Price \$1695 1745 2095 2195 2195 1695 1695 nued Price \$1065 1285 1285 1285 1285 1285 1285 1985 1985 1985 1985 1985 1985 1985 1295 1985 1295 1985 1295 1985 1295 1295 1295 1295 1295 1295 1295 129	Serial N 5100-5300 5301-5700 5301-5700 6001-6600 6350-7000 7001-7100 7101-7413 oth Corp Serial N 801-1800 2-325 d seat 9001-1159 9002-1159 11432-115 tt seat cusl 1801-3000 11600-187 11600-184 11600-184 1600-184
Year 1918-19 1920 1921 1922 1923 Number PEER 1917 1918 1919 1918 1919 1920 Since 19 Number 1921 1922 1924 1924 1924 1924 1924 1924	6-46 6-47 6-50 6-50 6-50 6-52 6-52 r on left side of the series of the s	6 6 6 6 6 6 6 6 6 6 6 8 8 8 8 8 8 8 8 8	1200 150	13-9504 10 up 10 up 10 up 10 and up 11 and up 12 and up 13 and up 14 and up 15 and up 16 and up 17 and up 18 and up	Early in carriage in the carri	nger in 1924 the r s was stoppelding of taxis 4-A Taxi 4-B Taxi 4-	nanufactured and the cabs exclused 4 4 reston tla. Cyls. 6 6 Discontin hern Md Cyls. 4 Discontin HT—R. 16line, 6 4 6 4 6 ash or on Discontin or Car Cyls. 4	ring of I plant w sively \$2400 2400 2400 Motor Price \$1295 1095 nued Price \$1295 nued \$2500 2475 1665 2850 right or inued \$250 Left or inued \$250	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314 Corp., Bir-Serial Numbers Serial Numbers 1001-13000 Knight Motor Serial Numbers 20000-20700 20701-21000 50000-50700 21001-21999 22000-22050 51000-52000 22051-22450 left hand side of Ansing, Mich. Serial Numbers 76001-96000	rad 1921 SAYE: Oi Year 1918 1919 1920 1922 1923 Number 1928 Number 1918 Number 1919 Numbe	iator 125 RS—Sayehio Model P-P-S-P-P-P-P-P-P-P-P-P-P-P-P-P-P-P-P-P	TH—Scrip Cyls. 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	\$1495 nued Price \$1695 1745 2095 2195 2195 1695 1695 nued Price \$1065 1285 1285 1285 1285 1295 1285 1295 1985 1985 1985 1985 1985 1985 1985 19	Serial N 5100-5300 5301-5700 5301-5700 6001-6600 6350-7000 7101-7413 oth Corp Serial N 801-1800 2-325 d seat 9001-1159 9002-1159 11432-115 at seat cusl 1801-3000 11600-187 11600-124 11600-124 11600-124 11600-124 11600-293
Year 1918-19 1920 1921 1922 1923 Number PEER 1917 1916 1917 1918 1919 1920 Since 19 Number 1921 1922 1924 1924 1924 1924 Number Number 1921 1922 1923 1924 1924 1924 1924 1924 1924 1924 1924	6-46 6-47 6-50 6-50 6-50 6-52 6-52 r on left side of the series 1 Series 2 de Series 5 Series 6 916 series moder on dash 56-S-7 56-S-7 66 67 70 er on metal plasers run accordentively MONT—Pie Whon T—Pie Whon T—Pie Whon T—Pie Hand Hand Hand Hand Hand Hand Hand Hand	6 6 6 6 6 6 6 6 6 6 6 8 8 8 8 8 8 8 8 8	1200 150	19-9504 10 up 10 up 10 up 10 and up	Early in car but 1924 PREM m Year 1921 1922 1923 RANG Year 1920 R. & C Year 1920 1921 1921 1922 1922 1923 1923 1923 1923	nger in 1924 the r s was stoppelding of taxis 4-A Taxi 4-B Taxi 4-	nanufactured and the cabs exclused 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	ring of I plant w sively \$2400 2400 2400	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314 Corp., Bir-Serial Numbers Serial Numbers 1001-13000 Knight Motor Serial Numbers 20000-20700 20701-21000 50000-50700 21001-21000-2050 51000-52050 1eft hand side of Ansing, Mich. Serial Numbers 76001-96000 2101-10200	rad 1921 SAYE: Of Year 1918 1919 1920 1921 1922 1923 Number 1925 Number 1919 Number 1919 Number 1920	RS—Saye hio Model P. A-P) B-P) D-P D-P D-P D-P T on cowl un PPS-BOO'l oit, Mich Model G H f-39 6-40 6-41 6-42 r plate on ri 6-39 r plate on ri 6-40 6-41 6-42 R-39 r plate on ri 6-40 8-41 8-42 B-39 B-40 B-41 B-42	TH—Scrip Cyls. 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	\$1495 nued Price \$1695 1745 2095 2195 1695 1695 nued Price \$1065 1285 right han \$1295 1295 1295 right han \$1295 1295 1295 right han \$1295 1295 1295 1295 right han \$1295 1295 1295 1295 right han \$1295 1295 1295 right han \$1295 1295 1295 right han \$1295 right h	Serial N 5100-5300 5301-5700 6001-6600 6350-7000 7001-7100 7101-7413 oth Corp Serial N 801-1800 2-325 d seat 9001-1159 9002-1159 11432-115 11434-115 11434-115 11430-1640 11600 11600 11600-124 11600-164 116420 up 18410 up 20250-293
Year 1918 PER) P	6-46 6-47 6-50 6-50 6-50 6-52 6-52 6-52 r on left side of the series 1 Series 2 & 3 Series 4 Series 5 Series 6 Series 6 Series 6 Series 6 For on dash 56-S-7 66 67 70 or on metal plasers run accordinately with the series for the ser	6 6 6 6 6 6 6 6 6 6 8 8 8 8 8 8 8 8 8 8	## 1890 160 1235 120 1360 1390 1390 1400 1500 1390 1500 1500 1500 1500 1500 1500 1500 15	13-9504 10 up 10 up 10 up 10 and up 11 and up 12 and up 13 and up 14 and up 15 and up 16 and up 17 and up 18 and up	Early in car builded to be carried to be car	nger in 1924 the r s was stoppelding of taxis 4-A Taxi 4-B Taxi 4-	nanufactured and the cabs exclused 4 4 reston tla. Cyls. 6 6 Discontin hern Md Cyls. 4 Discontin HT—R. 16line, 6 4 6 4 6 ash or on Discontin or Car Cyls. 4	ring of I plant w sively \$2400 2400 2400	Premier passenger as devoted to the T0307 to T2000 T2001 to T2314 Corp., Bir-Serial Numbers Serial Numbers 1001-13000 Knight Motor Serial Numbers 20000-20700 20701-21000 50000-50700 21001-21999 22000-22050 51000-52000 22051-22450 left hand side of Ansing, Mich. Serial Numbers 76001-96000	rad 1921 SAYE: Of Year 1918 1919 1920 1921 1922 1923 Number 1925 Number 1919 Number 1919 Number 1920	iator 125 RS—Sayehio Model P-P-S-P-P-P-P-P-P-P-P-P-P-P-P-P-P-P-P-P	TH—Scrip Cyls. 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	\$1495 nued Price \$1695 1745 2095 2195 1695 1695 nued Price \$1065 1285 1285 1285 1295 1985 1065 1295 2175 22175 2295 of front \$1295	Serial N 5100-5300 5301-5700 6001-6600 6350-7000 7001-7100 7101-7413 oth Corp Serial N 801-1800 2-325 d seat 9001-1159 9002-1159 11432-115 11434-115 11434-115 11430-1640 11600 11600 11600-124 11600-164 116420 up 18410 up 20250-293

No.		
No. State Column Proceedings Column		
100 1	Year Model Cyls. Price Serial Numbers	1922 4 4 \$ 348 E1 to 830 1921 A-4-45 4 2385 2751-3600
Second Column	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1924 F 4 540 207164 to 261999 1923 A-4-45 4 2125 6291 and up
March Marc	1920 L 4 \$1185)	
The control of Professional	M 4	As Star cars are numbered by manufacturing zones, it is
Street S	1922 50, 51 4 1095 3001-3900	Inc., New York City Texas
Very Model Cyls Price Serial Number Company Cyls	Number on dash and under hood and on left frame rail	STEARNSTRAIGHT—F. B. Stearns Co., 1019 A 4 91950 100 200
STATE 1995		Year Model Cyls. Price Serial Numbers 1919 A-B (A-38)
Second Column Col	SHAD-WYCK-Shadburne Bros., Inc., Chi-	Fight 8 2050 10000-10900 1920 (B-38) 4 1495 693 up
1918 C		and on right side of front seat on body
1902 E	1918 C 6 \$3500 601-700	1918 4 4 1785 4745-5900
1972 D. 6	1920 E 6 4000 901-1100	1919 L-4 4 2250 L5901-L7102 Okla.
SMILELEN Association Alexandra Corp.	1922 G 6 4000 1251-1400	1920 SKL4 4 2350 L7103 up 1918 D 4 \$1200 3000-3400
SIMPLEX Wished Cyls Price Serial Number Control Cyls Price Serial Number Control Cyls Price Serial Number Cyls Price		1922 SKL4 4 2250 L13400 up 1920 E 4 1335 4000 up
The color of the		1923 SKL4 4 2250 L14694 and up 1922 4 1175
Variety Model Cyls Price Secial Numbers Secia		1924 164 6 1295 53240 to 60200 Number on outside front end left hand side rail of frame
STEETION	Year Model Cyls. Price Serial Numbers	
1917 5	1916 50 4 4600 2080-2253	STEPHENS—Stephens Motor Car Co., Mo- Year Model Cyla Price Serial Numbers
1916 50.5 6 1912 190-04-05 1916 1917 1916 1917 1916 1917 1918 1917 1918 1917 1918 1917 1918 1917 1918 1917 1918 1917 1918 1917 1918	1917 5 6 6000 2254-2299	line, III. 1915 11 4 \$1500 32101-32500
SINGELLwinger Motor Co. Inc. MI. Very Very Model Cyls Price Serial Numbers 1919 75 6 1435 1900-19736 1917 27 6 1005 2000-2000 27 27 27 27 27 27 27	Serial numbers on dash plate	1916 65 6 \$1125 100-550 14 6 2015 19301-19451
Var. Model Cyls. Price Serial Numbers 1919 75 6 1675 12440-13000 1919 38 6 1485 20000-05500 1919 1917 1 6 7795-7795 1921 84 6 2460 12779-12791 1919 38 6 1485 20000-05500 1919 1		1917 75 6 1485 10000-10736 1916 22 6 1065 35000-39000
Vary Model Cyls Price Serial Numbers 1920 84 6 2490 2577-36971 1919 38 6 1868 2000-2009 1910 1	non, N. Y.	1919 75 6 1675 12449-13000 28 6 1185 50000-57844
1917 17	Year Model Cyls. Price Serial Numbers	1920 84 6 2400 17720-25724 39 6 1695 40000-40987
1916 10	1917 17 6 7785-7795	1921 84 6 2400 25271-26017 1919 38 6 1685 1921 94 6 1850 26018-27878 48 6 69001 up
Note Cyls Price Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE SERIA Numbers STEVENS STEVENS DUPLE SERIA Numbers STEVE	1919 19 6 19000-19940	1922 94 6 1595 27423-30923 1920 48 6 1985 70001 and up 1923 94 6 1595 30407-31118 34 6 1585 110001-118550
Note Cyls Price Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE SERIA Numbers STEVENS STEVENS DUPLE SERIA Numbers STEVE	Number on front spring, front horn bracket	1923 16-164 6 1295 50000-53240 1921 48 6 1885 70000-81300 1923 26-264 6 1595 32000-32960 34 6 1485 110000-116550
Note Cyls Price Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE Serial Numbers STEVENS DUPLE SERIA Numbers STEVENS STEVENS DUPLE SERIA Numbers STEVE		Number plate on dash, right side, under hood 1922 48 6 1585 6900-81300 Discontinued 24 6 1585 10000-110300
Columber	58 6 1395 120000 up	
SOUTHERN SIX		Chicopee Falls, Mass. 1924 56 6 1095
1921 35	35 4 1295 500 up	Year Model Cyls. Price Serial Numbers 1924 60 6 1225 Number on name plate left side seat box. Also stamped
1922 G		1922 E 6 6300 1100-1200 into top side frame at extreme right front end; 1923 E 6 7500 1201-1266 engine number left side crankcase and left hand
Number on engine frame at left front end		1923 G 6 7500 1301-1388 front motor leg
STANDARD		Number on engine frame at left front end Year Model Cyls. Price Serial Numbers
Var Model Cyls Price Serial Numbers 1920 6-60 6 \$2995 T-100	STOPPEN Studebaker Corp., South 6-55 6 2285\1000-2000	
SPACKE—The Spacek machine	tainable from manufacturer	Year Model Cyls. Price Serial Numbers 1920 6-66 2485 Year Model Cyls. Price Serial Numbers on dash board Serial numbers of dash board Serial numbers of dash
SPACKE—The Spacke Machine & Tool Co. Indinanpolis, Ind. Model Cyls. Price Serial Numbers Standard	1917 SF 4 \$ 940 474181 to 500369 to 1920 were located on bottom of left hand front seat.	
Section Model Cyls Price Serial Numbers on plate on inside dash 1500 150		1917 ED 6 1180 637261 to 655270 Discontinued
1916 STANDARD String S	Year Model Cyls. Price Serial Numbers	1918 SF 6 109501 to 133051 WALTHAM—Metz Co., Waltham, Mass.
STANDARD	(Changed in late 1920 to Brook) Serial numbers on	1918 ED 6 207501 to 233495 1ea 30001 to 1915 1925 6 \$2350 55001 up
STANLEY Steam Steel Corp. Pitch Surial Numbers Pitch P	Discontinued	1919 EH 6 1585 233501 to 257464 Serial numbers on front cross member
Variable STANDARD—Standard Steel Car Co., Pitts-	1919 Sh 4 1225 133101 to 141975 1920-21 EG 6 2150 315701 to 335069 WASHINGTON — Washington Motor Co.,	
1917 F 8 2450 (100-599 1918 1918 1918 1918 1918 1918 1918 1919	Year Model Cyls. Price Serial Numbers	1920-21 EH 6 504501 to 535876 Eaton, Ohlo
1917 F	2100	1920-21 EJ 6 1485 1000001 and up 1922 C 6 \$1785 1-125
1921 J		1922 EK 6 1785 2000001 and up Number on left hand side dash
1921 J	1920 I 8 3400 1600-3605	1923 EL 6 1350 3039123 and up 1923 EK 6 1750 2017140 and up
1923 99 8 2500 10000 up 10000 up	1921 J 8 3400 1922 98 8 2500 10000 up	1923 EM 6 995 1084001 and up 1924 EK 6 1875 2027500 and up 1924 Year Model Cyls. Price Serial Numbers
Part	1923 99 8 2500 10000 up	1924 EL 6 1495 3075317 and up 1920 201 4 2011 and up
STANLEY-Steam Vehicle Corp. of America, Newton, Mass. Newton, Newton, Newton, Newton, Newton, Newton, Newton, Newton, Newton, Newton	Discontinued	1925 EP 6 1875 2060001 and up Number on instrument board
Newton, Mass. Vear Model Cyls. Price Serial Numbers 1915 720 & 721 2 \$1975 15001-15999 1916 725, 726 2 2 2200 16001-16999 1917 728 & 736 2 2 2200 17001-17999 1918 735 & 736 2 2 2200 17001-17999 1918 735 & 736 2 2 4275 19001-19999 1919 4-G 4 2750 1201 16001 16001 1920 735-A 2 4275 19001-19999 1919 4-G 4 2750 2501 to 2396 735-A 2 4275 19001-19999 1919 4-G 4 2750 2501 to 4503 735-B 2 4275 19424-20251 1920 4-H 4 3100 5001-9002 1921 735-C 2 5000 21001 and up 1921 735 - 2 2 2000 21001 and up 1921 735 - 2 2 2000 21001 and up 1922 740 2 2 2700 (22001-22115 1923 740 2 2 2700 (22001-22115 1924 KLDH 4 2990 12001 and up 1923 740 2 2 2750 23000 and up 1924 750 2 2 2750 23000 and up 1925 693 694 6 14001 and up 1926 695 6 14001 and up 1927 750 8erial Numbers 1918 735 8 736 2 2 2000 2000 20001 up 1925 695 6 14001 and up 1926 748 6 1890 20001 up 1927 750 2 2 2750 23000 and up 1928 750 2 2 2750 23000 and up 1929 8erial Numbers 1916 41 6 1255	STANLEY—Steam Vehicle Corp. of America.	1925 ER 6 1145 1202001 and up
1915 720 & 721 2 2 200 15001-15999 1103-1348 1915 725, 726 2 2200 16001-16999 1103-1348 1103-1348 1915 727, 728 728 & 736 2 2200 17001-17999 1916 4-C 4 2300 2901 to 4313 42 6 1454 4201-5100 1917 4-R 4 2750 1500-1699 1917 4-R 4 2750 1500-1699 1918 4-S 4 2750 1500-1690 1918 4-S 4 2750 1500-1	Newton, Mass.	Springfield, Ohio
1918 735 736 737 18001-18999 1917 4-R 4 2750 1502396 1917 17 6 1595 4599-5402 1920 735 2 4275 19001-19999 1919 4-G 4 2750 2501 to 4503 1920 4-H 4 3100 5001-9002 1920 13750-16292 1920 4-H 4 3100 5001-9002 1920 13750-16292 1920 13750-1	1915 790 & 791 9 \$1075 15001 15000	STUTZ—Stutz Motor Car Co., Indianapolis, 1915 0-35 4 \$1185 1103-1348
1918 735 736 737 18001-18999 1917 4-R 4 2750 1502396 1917 17 6 1595 4599-5402 1920 735 2 4275 19001-19999 1919 4-G 4 2750 2501 to 4503 1920 4-H 4 3100 5001-9002 1920 13750-16292 1920 4-H 4 3100 5001-9002 1920 13750-16292 1920 13750-1	727, 728) 1917 728 & 730 2 2200 17001-17000	Year Model Cyls. Price Serial Numbers 1916 41 6 1295 4001-4200
1920 735 2 4275 19001-19999 1919 4-G 4 2750 2501 to 4503 1920 4-H 4 3100 5001-9002 1920 1	1918 735 & 736 2 2800	1917 4-R 4 2550 4401 to 6407 51 6 1595 4599-5402
1923 740 2 2750 23000 and up 1924 690, 692 6 6-101 and up 1924 750 2 2750 24000 and up 1924 695 6 14001 and up 1925 693, 694 6 6-2601 and up 1925 695, 695 6 14001 and up 1925 695 6 14001 and up 1926 19	1920 735 2 4275 19001-19999	1919 4-G 4 2750 2501 to 4503 Number on dash plate
1923 740 2 2750 23000 and up 1924 690, 692 6 6-101 and up 1924 750 2 2750 24000 and up 1924 695 6 14001 and up 1925 693, 694 6 6-2601 and up 1925 695, 695 6 14001 and up 1925 695 6 14001 and up 1926 19	735-A 2 4275 735-B 2 4275 19424-20251	1920 4-H 4 3100 5001-9002 1921 4-K 4 3350 10001 to 11139 1918 S-18 6 1890 6293-7200 2290 7201-8088
1923 740 2 2750 23000 and up 1924 690, 692 6 6-101 and up 1924 750 2 2750 24000 and up 1924 695 6 14001 and up 1925 693, 694 6 6-2601 and up 1925 695, 695 6 14001 and up 1925 695 6 14001 and up 1926 19	735-C 2 5975 735-D 2 5775	1922 KDH 4 2990 12001 and up 1919 A-48 6 2590 8101-8904 1923 KLDH 4 2790 13129 and up A-38 6 1775 10001-10402
1923 740 2 2750 23000 and up 1924 690, 692 6 6-101 and up 1924 750 2 2750 24000 and up 1924 695 6 14001 and up 1925 693, 694 6 6-2601 and up 1925 695, 695 6 14001 and up 1925 695 6 14001 and up 1926 19	1921 735 2 2600 21001 and up 1922 740 2 2700 (22001-22115	1923 690, 692 6 1995 6-101 and up B-38 6 2390 11001-11801
1924 750 2 2750 24000 and up 1925 693, 694 6 6 6 2691 and up 1925 695	1923 740 2 2750 23000 and up	1924 690, 692 6 6-101 and up C-48 6 2890 20001 up
Number on left side of dash 1922 C-8 6 1890 20001 up	1924 750 2 2750 24000 and up	1925 693, 694 6 6-2601 and up 1921 C-48 6 \$2990 20800-21050
St. Louis, Mo. Year Model Cyls. Price Serial Numbers TEMPLAR—Templar Motors Corp., Cleve- 1923 B-44 6 1690 24200 and up 1921 1921 1924 1925 1925 1926 1926 1926 1926 1926 1927 1928		Number on left side of dash 1922 C-48 6 1890 20001 up
1921 6 6 \$2050 Year Model Cyls. Price Serial Numbers 1924 44 6 1690 1922 6 6 1765 1918 A-4-45 4 \$2185 1-125 1924 48 6 1990	St. Louis, Mo.	TEMPLAR—Templar Motors Corp., Cleve- 1923 B-44 6 1690 24200 and up
1010 A-1-10 1 42100 1-120 1021 10 0 1000	1921 6 6 \$2050	Year Model Cyls, Price Serial Numbers 1924 44 6 1690
	0 1100	1918 A-4-45 4 \$2185 1-125 1924 48 6 1990 1919 A-4-45 4 2485 126-1200 Number on engine and on cowl under hood
	-	

Year 1921 1922 1923 1923 1924	Model A-68 A-68 A-68 B-68 A-68	CLAIRE- ville, Mic Cyls. 8 8 8	Price \$3200 2475 2475 2875 2475	Serial 1-1500 1551-60 6000-74 10000-1 7474 to	73 0162 7690	Year 1918-19	Model 89		Price	Serial 1-12000	Numbers	Year 1920 1921 1922 Number	Model 25 25 25 26 40 r on left front	Cyls. 6 6 6 6	Price \$4250 4800 3400 otor	Serial N 35675-357 155-2675 2676-2999 3000-3689	Number 707
1924 1925 1925 1925	B-68 A-68 B-68 W-6	8 8 8	2475 2885 2485	7697 ar 12190 s			HER—W		Motor	Sales	Corp.,	1923	40	Discontin		3690 and	up
WILLY	s-KNIG	driver's co			, Inc.,	Year 1920	Model 61	Cyls.	Price	61001 ar	Numbers nd up	YELL	ow—Yelle	ow Cab	Mfg.	Co., Ch	ieago
Manufac descr		not wish to For informatedo, Ohio				1921 Number	61 on left sid	6 e front mo Discont			oar	Year 1924 1924	Model A-2 Cab O-4 Cab	Cyls.		Serial N 27551 to : 18005 to	29972

Carbureter Types and How They Work



(Carbureter Specifications on 1925 Passenger Cars on Next Page)

CARBURETERS in general can be divided into five general types, as shown by A, B, C, D and E. In this group, A shows in the simplest manner possible the plain tube type of carbureter of which Stromberg, some models of the Schebler, Rayfield and others are examples. The plain tube type derives its name from the fact that there is but one constant air brake intake in which is placed the fuel nozzle.

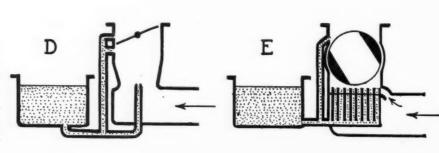
Metering Pin Type

A T B is shown a metering pin type of carbureter, examples being the Rayfield, Schebler model T and the Stewart. In this type of carbureter the size of the fuel jet is increased automatically with the opening of the throttle or butterfly valve. Sometimes the metering pin is controlled by an auxiliary air valve or simply by air suction, as in the Stewart carbureter.

Auxiliary Air Valve Type

THE auxiliary air valve type carbureter is shown in C. Here the air flow is increased by the suction of the engine which opens a valve usually retained by a spring. Normally this valve

is closed and air is taken in for idling through a constant air intake of small size. As the engine increases in speed the auxiliary valve is drawn from its seat and furnishes additional air to give the fuel mixture correct



proportions. Auxiliary air valves are found on many makes of carbureters.

Compensating Jet Carbureter

THE compensating jet type carbureter is shown by D examples being the Zenith and Stromberg carbureters. Here one or sometimes two jets are placed in the throat of the carburetor near the butterfly valve when the latter is seated. The engine gets its mixture for idling from the small jet just above the butterfly and for normal speeds from the jet just below. When the throttle is opened the main jet in the center furnishes the fuel.

Multiple Jet Type

THE multiple jet or expanding type carbureter such as the Miller and Master, is shown by E. In this carbureter a barrel-type throttle valve is used in place of a butterfly and as this barrel revolves when the throttle is opened it uncovers a series of fuel jets. The air intake surrounds these jets and

an idling jet is placed above the barrel, as the other jets do not come into action when the throttle is closed.

In all the above diagrams the air flow is indicated by arrows and the fuel by the shaded portion.

Carbureters, Air Cleaners, Fuel Systems and Copper Tubing Sizes on 1925 Passenger Cars

		ENGIN	E .	CAR	BURETOR		AIR CL	EANER	FUEL	SYSTE	M	TUB	INC
MAKE AND MODEL	Make	Model	No. of Cyls. Bore and Stroke (In.)	Make	Model	Size (In.)	Make	Type	Fuel Feed	Tank Location	Tank Capacity Gals.)	Cor	pper
mericanD66	Hershell									-	F		-
nderson 41 derson 50 pperson 6 pperson V8 pperson Straight Away 8 aburn 6-43 aburn 8-88	Spillman Continental Continental Own Own Own Continental Lycoming	91 7U 8R 6 V8 St. 8 7U 2H	6-3½ x5 6-3½ x4½ 6-3½ x4½ 6-3¾ x4⅓ 8-3½ x5 8-3½ x4⅓ 8-3½ x4⅓	Stromberg Zenith Zenith Stromberg Schebler Schebler Stromberg Schebler	T4X USL RI SX11 S OE	11/4	None None None None None None None	None None None None None None None	Vacuum Vacuum Vacuum Vacuum Vacuum Vacuum Vacuum Vacuum	Rear Rear Rear Rear Rear Rear Rear	18 17 17 20 20 20 15	200000000000000000000000000000000000000	9/8/8/9/19/19
iickStandard	Own Own	Stand. Master	6-3 x434 6-334x434	Marvel Marvel	T38 T48	11/2	None None	None None	Vacuum Vacuum	Rear Rear	17 20	::	
dillac V63 150 V63 150 V63 150 V64 V	Own Continental Continental Continental Own Own Own Own Own Own Own Own	V63 T6 8R 8R 8S K 6 31 43 311 V6	8-314x514 6-354x514 6-354x414 6-354x414 6-315x5 4-311x4 6-274x414 6-374x414 8-374x414 8-374x414	Own Schebler Rayfield Schebler Schebler CarZen. Ball & Ball Johnson Schebler Johnson Stromberg	St. 3 SX.43 Special Special SV26C Special SI A	2 134 134 134 134 134 134 134 134	None None None None None None United None None None None None None	None None None None None Cent. None None None None None	Pressure Vacuum	Rear Rear Rear Rear Rear Rear Rear Rear	20 18 18 18 20 10 12 12 16 20 24	16 16 16 16 16 16 16 16 16 16 16 16 16 1	
agmar 6-60 agmar 5-70 ayis 970 ayis 970 ayis 971	Continental Continental Continental Continental Own Own Own Wisconsin Continental	8R 6J 7U 8R 25 6-80 8A Y Special	6-3 1/4 x 4 1/4 6-3 1/4 x 4 1/4 6-3 1/4 x 4 1/4 6-3 1/4 x 4 1/4 4-3 1/4 x 4 1/4 6-4 x 5 8-2 1/4 x 5 6-3 1/4 x 5 4-3 1/4 x 4 1/4	Schebler Schebler Stromberg Stromberg Stewart Stromberg Stromberg Schebler Tillotson	SX86 8X85 OE1 OE2 25 03 03 8 L1A	11/4	None None None None None None None None	None None None None None None None None	Vacuum Vacuum Vacuum Vacuum Vacuum Vacuum Vacuum Vacuum Vacuum	Rear Rear Rear Rear Rear Rear Rear Rear	15 16 17 17 15 20 22 22 21 13	******	
car 4-41 car 6-51 car 8-81 sex 6	Lycoming Continental Lycoming Own	CF 7U H 6	4-3%x5 6-3¼x4¼ 8-3° x4¼ 6-2¼x4¼	Zenith Zenith Stromberg Detroit	T4X T4X OX2 Special	111/4	None None None None	None None None None	Vacuum Vacuum Vacuum Vacuum	Rear Rear Rear Rear	17 16 18 936	, i	
int	Continental Continental Own Own	Special 6W T 11A	6-314 x5 6-314 x414 4-334 x4 6-314 x4	Stromberg Tillotson Own-Kin. Stromberg	OX2 OA1A Special Special	1111	None None None United	None None None Cent.	Vacuum Vacuum Gra. Vacuum	Rear Rear Seat Rear	20 12 10 15	******************	
ardner	Lycoming Lycoming Own	CE H R	4-311 x5 8-3 x414 4-31/x4	Zenith Schebler Scoe	T4X Special Special	1 i · ·	None None None	None None None	Vacuum Vacuum Vacuum	Rear Rear Rear	13 20 10	34	
iynes. 60 C. S. 66 rttz. D1 ddson. 6 ipmobile. R ipmobile E	Own Own Continental Own Own Own	60 6 7U 6 R E	6-3½ x4¼ 6-3½ x5 6-3½ x4¼ 6-3½ x5 4-3½ x5 4-3½ x5½	Rayfield Stromberg Zenith Detroit Stromberg Stromberg	405-3-K8 03 T4X Special M OX2	1½ 1½ 1 1½ 1½ 1½	None None None None None None	None None None None None	Vacuum Pressure Vacuum Vacuum Vacuum Vacuum	Rear Rear Rear Rear Rear	18 18 171/2 19 16 16	*	
wett	Own Continental Continental	23-25 Special Special	6-31/x5 8-3 x41/ 6-31/x41/	Stromberg Stromberg Stromberg	OX2 OX2 02	134	None United None	None Cent. None	Vacuum Vacuum Vacuum	Rear Rear Rear	17.6 18 15	2	1
ssel	Own Own	55 75	6-3%x5% 8-3%x4%	Stromberg Schebler	OS2 Special	11/4	None	None Cent.	Vacuum Vacuum	Rear Rear	18 17	*	
xington	Ansted Ansted Own Own	M F 8 48	6-3%x4½ 6-3%x5% 8-3%x5 6-4½x5½	Rayfield Rayfield Stromberg Ball & Ball	MR4 03 Special	11/2	None None None None	None None None None	Vacuum Vacuum Vacuum Pressure	Rear Rear Rear	16 16 20 30	2	
armon 74 axwell 25C CFarlan SV CFarlan TY CFarlan TY CFOOD Newport oon Metropolitan oon London oon Series A	Own Own Wisconsin Own Own Continental Continental Continental	74 25C Y TV 6 7U 7C 8R 7Z	6-3 ½ x5 ½ 4-3 ½ x4 ½ 6-3 ½ x5 6-4 ½ x6 6-3 ½ x5 6-3 ½ x4 ½ 6-3 ½ x4 ½ 6-3 ½ x4 ½ 6-3 ½ x4 ½	Stromberg Stewart Rayfield Rayfield Stromberg Stromberg Stromberg Stromberg Stromberg	03 Special G4P G5P OC3 01 OE2 OE2 R1	11/4	None None None None None None None None	None None None None None None None None	Vacuum	Rear Rear Rear Rear Rear Rear Rear Rear	19 11 19 23 22 15 15 14	36 36 36 36 36 36 36 36 36 36 36 36 36 3	
ashAdvanced	Own Own	161 131	6-314x5 6-314x414	Marvel Marvel	Special Special	114	None None	None None	Vacuum Vacuum	Rear Rear	1514 1514	% %	
kland	Own Own Own Own	6-54 30 91 93	6-2 1/4 x 4 3/4 6-2 3/4 x 4 3/4 4-3 3/4 x 4 6-3 x 4	Stromberg Zenith Tillotson Tillotson	OE1 T4XF MS15 Special	1%	None None None None	None None None None	Vacuum Vacuum Vacuum Vacuum	Rear Rear Rear	12 1214 10 10	2	
ackard. 6 ackard. 8 aige 21-24 seriess. 70 seriess. Equip 8 erce Arrow. 33 erce Arrow. 80	Own Own Continental Own Own Own	6 8 10A 70 67 33 80	6-31/4x5 8-33/4x5 6-33/4x5 6-31/4x5 8-31/4x5 6-4 x51/4	Own Own Rayfield Johnson Stromberg Own	6 8 G4P R OE3 33 80	1% 1% 1% 1% 1% 1%	None None None None None None None	None None None None None None None	Vacuum Vacuum Vacuum Vacuum Vacuum Pressure Vacuum	Rear Rear Rear Rear Rear Rear	211/2 21 21 20 20 26 18	KOROKKAK	
eo. T6 evere M evere M evere 25 ekenbacker D ekenbacker 8 amer 4-75E auner 6-54E allin G olis-Royce 44-50	Own Monson Continental Own Own Duesenberg Continental Own	T6 M 6J D 8 G1 12XD G 40-50	6-3 1/4 x5 4-4 1/4 x6 6-3 1/4 x4 1/4 8-3 1/4 x4 1/4 4-4 1/4 x6 6-3 1/4 x4 1/4 4-3 1/4 x4 1/4 6-4 1/4 x4 1/4	Schebler Stromberg Schebler Stromberg Zenith Stromberg Stromberg Tillotson Own	S OX2 T4DS 03 OC2 01A 40-50	114 114 114 114 114	None None Detroit Detroit None None None None	None None Inertia Inertia Inertia None None None None	Vacuum Vacuum Vacuum Vacuum Vacuum Vacuum Vacuum Vacuum Vacuum	Rear Rear Rear Rear Rear Rear Rear	1734 25 25 22 22 22 20 20 12 21	X 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
ar 4 earns-Knight C earns-Knight B earns-Knight B earns-Knight S earns-Knight B6 evens-Unight B6 evens-Duryea G dudcbaker Special udcbaker Big 6 udcbaker Sta 6 e93-4	Continental Own	Special C B B B G Special Big Sta. 695	4-3 \(\) x4 \(\) 4-3 \(\) x5 \(\) 4-3 \(\) x5 \(\) 6-3 \(\) x4 \(\) 6-4 \(\) x5 \(\) 6-3 \(\) x5 \(\) 8-3 \(\) x5 \(\) 6-3 \(\) x5 \(\) 8-3 \(\) x5	Tillotson Johnson Schebler Johnson Stromberg Stromberg Stromberg Ball & Ball Stromberg Stromberg	Special Special Special H OS2 03 LS2 SB14 OE1 Special	1 114 114 114 114 114 114 114	None None None None None None None None	None None None None None None None None	Vacuum	Rear Rear Rear Rear Rear Rear Rear Rear	111/4 116 124 220 25 14 19 19	NAME OF THE PARTY	
'elie60	Own	50	6-3%x4%	Stromberg	RI	1	None	None	Vacuum	Rear	16%	%	
Vestcott 44-60 VIIIs Ste, Claire ABC68 VIIIs Ste, Claire W6 VIIIya-Knight 65 VIIIys-Knight 66	Continental Own Own Own Own	8R B68 W6 65	6-3%x4% 8-3%x5 6-3%x5% 4-3%x4% 6-3%x4%	Stromberg Schebler Zenith Tillotson Tillotson	OE2 Special SX6 MS2B R2A	11/4 11/4 11/4 11/4 11/4	None None None Prot.	None None None None Strainer	Vacuum Vacuum Vacuum Vacuum Vacuum	Rear Rear Rear Rear Rear	15 1814 1814 16 16	% %	

Connecting Rods, Crankshafts, Bearing Sizes and Oiling Systems on 1925 Passenger Cars

	ENGIN	E		Conning R	ect-				•	CRANK	SHAFT				Oilin Syst	ng tem	
			No. of Cylinders	nter	.pd.	Crani Beari Siz	ing		Ma		ings Si			nces			
MAKE AND MODEL	Make	Model	Bore and Stroke (Ins.)	Center to Center Length (In.)	Weight (Compl. Oz.)	Diameter (In.)	Length (In.)	Number	Diameter (In.)	Length (In.)	Diameter (In.)	Leagth (In.)	Offset	Counterbalances Used	Type	Pump Type	MAKE AND MODEL
merican D66 nderson 41 nderson 50 pperson 6 pperson V8 pperson St. Away 8 auburn 43 auburn 8-63	Spillman Continental Continental Own Own	91 7U 8R 6 V8 S8 7U 2H	6-3 ½ x5 6-3 ½ x4 ½ 6-3 ½ x4 ½ 6-3 ½ x4 ½ 8-3 ½ x5 8-3 ½ x4 ½ 6-3 ½ x4 ½ 8-3 ½ x4 ½	11.00 8.25 10.50 8.12 11.50 9.00 8.25 9.00	56 32 52 52 32 37	2.00 2.00 2.25 2.00 2.00 2.12 2.00 2.12	1.69 1.37 1.56 1.62 1.50 1.50 1.37	7 4 4 4 3 5 4 5	2.12 2.00 2.25 2.00 2.00 2.37 2.00 2.37	2.37 1.50 2.34 2.18 2.81 2.68 1.50 2.68	2.12 2.00 2.25 2.00 2.00 2.37 2.00 2.37	2.81 2.12 2.81 3.00 3.50 2.58 2.12 2.68	No No No No No No No	No No No No Yes No No	Pr. Cs. Pr. Cs. Pr. Cs. Fl. Pr. Pr. Cs. Pr. Cs. Pr. Cs. Pr. Cs.	Gear Gear Gear Gear Gear Gear Gear	American D Anderson Anderson Apperson Apperson Apperson Apperson Apperson Abburn Auburn 8-
uickStandard uickMaster	Own Own	Sta. Mas.	6-3 x4 1/4 6-3 1/4 x4 1/4	10.00 10.75	::	2.00 2.25	1.50 1.75	44	2.12 2.37	2.28 2.62	2.12 2.37	2.59 2.78	No No	No No	Pr. Cs. Pr. Cs.	Gear Gear	Buick Standa Buick Mast
Cadillac	Continental Continental Continental Own Own Own Own Own Own Own	V63 6T 8R 8R 8S K 6 31 43 311 V6	8-31/4x51/4 6-33/4x41/4 6-33/4x41/4 6-31/4x5 4-31/4x4 6-31/4x41/4 6-31/4x41/4 8-31/4x41/4 8-33/4x41/4	12.50 11.00 10.50 10.50 10.25 7.37 10.00 8.50 10.25 9.50 10.50	54* 51 52 52 52 29 34 39 31 53	2.37 2.37 2.25 2.25 2.37 1.50 1.87 2.25 2.12 2.62	2.75 1.87 1.56 1.56 1.87 1.87 1.37 1.62 2.50 3.50	344443733333	2.37 2.37 2.25 2.25 2.40 1.37 1.87 2.21 2.00 2.75	2.81 2.34 2.34 2.62 2.31 1.87 2.65 3.06 3.00	2.37 2.37 2.25 2.25 2.50 1.75 1.87 2.28 2.12 2.75	4.06 3.06 2.81 2.81 3.25 2.68 2.43 3.12 3.72 3.93	No No No No No No No No No	Yes No No No No No No No Yes Yes	Pr. Cs. Pr. Cs. Pr. Cs. Pr. Cs. Pr. Cs. Sp. Pr. Pr. Cs. Pr. Cs. Pr. Cs. Pr. Cs. Fr. Cs.	Gear Gear Gear Gear Gear Gear Gear Gear	Cadillac. V Case Case Case Case Chandler Cherolet Chrysler Cleveland Cleveland Cleveland Cole Cole Conningham
Dagmar 6-60 Dagmar 6-70 Davis 90 Davis 91 Dodge Brothers 25 Dorris 6-80 Duesenberg St. 8 Du Pont D Durant 4	Continental Continental Continental Continental Own Own Own Wisconsin Continental	8R 6J 7U 8R 25 6-80 8A Y Spec.	6-31/4x41/2 6-31/4x41/2 6-31/4x41/2 6-31/4x41/2 4-31/4x41/2 6-4 x5 8-21/4x5 6-31/4x5 4-31/4x41/2	10.50 11.00 8.25 10.50 9.12 12.00 9.75 12.00 8.00	52 74 32 52 44 49 32 59	2.25 2.37 2.00 2.25 1.62 2.00 2.25 2.50	1.56 1.87 1.37 1.56 1.87 2.00 1.75 1.50	444373333	2.25 2.37 2.00 2.25 1.87 2.25 2.37 2.50	2.34 2.34 1.50 2.34 2.45 2.00 2.24 2.34	2.25 2.37 2.50	2.81 73.06 2.12 2.81 2.58 2.50 2.93 2.75	No No No No No No No No	No No No No No No No No	Pr. Cs. Pr. Cs. Pr. Cs. Pr. Cs. Cl. Sp. Fl. Pr. Pr. Cs. Pr. Cs. Pr. Cs.	Gear Gear Gear Gear Ecce. Gear Gear Gear Gear	Dagmar 6 Dagmar 6 Davis Davis Dodge Brothers 6 Duesenberg St Du Pont Durant
Elcar	Lycoming Continental Lycoming Own	CF 7U H	4-3 % x5 6-3 ½ x4 ¼ 8-3 x4 ½ 6-2 ‡ x4 ¼	12.00 8.25 9.00 8.31	50 32 37 24	2.12 2.00 2.12 1.81	1.81 1.37 1.50 1.37	5 4 5 3	2.12 2.00 2.37 2.21	2.62 1.50 2.68 1.56	2.12 2.00 2.37 2.28	2.62 2.12 2.68 1.75	No No No	No No No Yes	Pr. Cs. Pr. Cs. Pr. Cs. Ci. Sp.	Gear Gear Gear Piston	Elcar
lint 40 lint 55 ord T ranklin 11		6W Spec. T	6-31/4 x 4 1/4 6-33/4 x 5 4-33/4 x 4 6-31/4 x 4	8.25 10.50 7.00 8.00	2i 2i 21	2.00 1.24 2.00	1.50 1.50 1.68	4 3 3 7	2.00 2.00 1.24 2.00	1.50 2.26 2.00 2.37	2.00 2.00 1.24 2.00	2.34 2.93 3.12 2.62	No No No No	No No No No	Pr. Cs. Pr. Cs. Splash Pr. Cs.	Gear Gear None Gear	FlintFlintFordFranklin
Gardner		CE H R	4-3 11 x5 8-3 x4 1/2 4-3 1/4 x4	12.00 9.00 7.00	50 37 24	2.12 2.12 1.50	1.81 1.50 1.50	5 5 3	2.12 2.37 1.50	2.62 2.68 1.75	2.12 2.37 1.50	2.62 2.68 2.62	No No No	No No No	Pr. Cs. Pr. Cs. Splash	Gear Gear None	Gardner Gardner Gray
Iaynes 60 I. C. S. 6 Iertz DI Iudson 6 Iupmobile R14 Iupmobile E1		60 6 7U 6 R	6-3½x4¾ 6-3½x5 6-3½x5 6-3½x5 4-3½x5 4-3½x5⅓ 8-2½x4¾	10.11 11.50 8.25 11.62 11.87 9.50	57 55 32 58 24 20	2.25 2.50 2.00 2.25 2.00 2.37	2.00 1.75 1.37 2.00 1.62 1.25	3 4 4 3 5	2.37 2.50 2.00 2.25 2.12 2.59	3.31 2.50 1.50 2.37 1.75 1.84	2.37 2.50 2.00 2.68 2.06 2.62	3.62 2.75 2.12 3.12 3.00 2.56	2.37 No No No No No	No No Yes Yes No	Sp. Pr. Fl. Pr. Pr. C3. Cl. Sp. Pr. C8. Pr. Cs.	Gear Gear Gear Piston Gear Gear	Haynes H. C. S. Hertæ Hudson Hupmobile Hupmobile
lewett23-2! lordan	Own Continental Continental	23-25 Spec. Spec.	6-31/x5 8-3 x43/ 6-31/x43/	10.50 10.87 10.50	52	2.37 2.12 2.25	1.75 1.50 1.56	3 5 4	2.39 2.37 2.25	2.34 1.50 2.37	2.35 2.37 2.50	2 65 2.50 3.05	No No No	Yes No No	Pr. Cs. Pr. Cs. Pr. Cs.	Gear Gear Gear	Jewett23 Jordan
Kissel55	1	55 75	6-3%x5% 8-3%x4%	10.00	62	2.25	1.75	3 5	2.48 2.37	2.15 2.68	2.48 2.37	2.84 2.68	No No	No	Sp. Pr. Pr. Cs.	Gear Gear	Kissel
exingtonConcord exington Minute Mar Ancoln	Ansted Ansted Own Own	M F 8 48	6-3 14 x 4 14 6-3 14 x 5 14 8-3 14 x 5 14 6-4 14 x 5 14	8.50 9.18 12.50 12.00	62*	2.25 2.25 2.00 2.25	1.62 1.62 2.00 2.00	3 5 7	2.75 1.75 2.00 2.50	2.50 2.50 2.75 2.68	2.37 2.37 2.00 2.50	3.37 3.37 3.50 3.18	Yes Yes	No Yes No	Fl. Pr. Fl. Pr. Pr. Cs. Fl. Pr.	Gear Gear Gear Gear	Lexington Cond Lexington Minute M Lincoln
Marmon 7. Maxwell 2: McFarlan S\ WcFarlan T\ Morcer Moon Newpor Moon Metropolita Moon Series Z Moon London	Own Own Own Own Continental	74 25 Y TV 6 7U 7C 7Z 8R	6-334 x534 4-35 x436 6-336 x5 6-44 x6 6-35 x x5 6-35 x x434 6-35 x x434 6-35 x x434	10.18 7.87 12.00 12.00 10.00 8.25 8.25 8.25 10.50	72 28 59 92 32 32 32 32	2.56 1.87 2.50 2.25 2.00 2.00 2.00 2.25	2.00 1.50 1.50	3 3 4 3 4	2.74 1.87 2.50	2.25 2.81 2.34 3.00 2.50 1.50 1.50 2.34	2.74 1.87 2.50 2.37 2.50 2.00 2.00 2.00 2.25	3.75 2.81 2.75 3.50 3.50 2.12 2.12 2.12 2.81	No No No No No No No No	No No Yes No No No No No No	Fl. Pr.	Gear Vane Gear Gear Gear Gear	Marmon Maxwell McFarlan McFarlan Mercer Moon New Moon Metropol Moon Loo
NashAdvanced NashSpecia	1 Own	161 131	6-314x5 6-314x414	10.00 9.00	1::	2.37 2.25	2.00 1.87	1		$\frac{2.75}{2.50}$	2.37 2.25	3.25 2.62	No No	Yes No	Pr. Cs. Pr. Cs.	Gear Gear	NashAdvar NashSpe
Oakland6-5 Oldsmobile3 Overland91 &	Own Own Own	6-54 30 92	6-2%x4% 6-2%x4% 4-3%x4	8.85 8.50 7.50	28 28	1.87 1.87 1.37	1.50 1.50 1.50	3 3	2.00 2.00 1.62	2.00 2.68 1.75	2.18 2.12 1.62	2.12 2.28 2.50	No No No	No No No	Pr. Cs. Pr. Cs. Splash	Gear Gear None	OaklandOldsmobile91
Packard Packard Palge 21-2 Peerless 7 Peerless Equip Pierce Arrow 8	6 Own	6 8 10A 70 67 33 80	6-3½x5 8-3½x5 6-3½x5 6-3½x5 8-3½x5 8-3½x5 6-4 x5½ 6-3½x5	10.00 10.00 11.00 10.00 11.00 11.00 10.50	37 49 50 59	2.12 2.37 2.12 2.12 2.12 2.25 2.00	1.50 1.50 1.87 1.50 1.50 1.75	9 4 7 3	2.37 2.37 2.37 2.37 2.25 2.25 2.37	2.56 2.93 3.18 2.56 2.79 2.75 2.37	2.37 2.37 2.37 2.37 2.25 2.25 2.37	2.50 2.50 3.34 2.50 3.64 3.25 2.75	No No No No No No	Yes Yes Yes Yes Yes No No	Pr. Co.	Gear Gear Gear Gear Gear Gear	Packard
Revere	Monson Continental Own Continental Coun Countinental Coun Coun Coun Coun Coun Coun Coun	T-6 M 6J D 8 12XL G 40-50	6-41/4 x 4 1/4	10.50 12.00 11.00 10.00 10.25 9.00 9.90	74 29 21	2.25 2.37 2.00 2.00 1.75 2.25	1.87 1.37 1.37	2 4 7 9 3 4	2.25 2.37 2.56 2.31 2.39 1.62 2.25	2.37 2.34 1.50 1.50 2.75 2.25 3.00	2.25 2.37 2.56 2.31 2.29 2.18 2.25	3.62 3.06 2.25 2.25 3.15 2.50 3.75	No No No No No No	No Yes No No No No No No	Sp. Pr. Cl. Sp. Pr. Cs. Pr. Cs. Pr. Cs. Sp. Pri Pr. Cs. Fl. Pr.	Pistor None Gear Gear Gear Gear Gear	Revere Revere Rickenbacker Rickenbacker Roamer6- Rollin Rolls Royce4
Star Stearns Knight Stearns Knight Sterling Knight Stevens Duryea Studebaker Studebaker Studebaker Studebaker Studebaker Big Stutz 693-4-	4 Continental C Own Own 6 Own 7 Own 7 Own 8 Own	Spec. C S B6 G Sta. Spec. Big 695		8.00 11.00 12.06 11.00 11.62 10.00 11.25 11.25	53 58 41 67	2.37 2.50 2.12 2.06 2.00 2.31 2.31 2.50	1.62 1.75	4	1.50 2.37 2.50 2.50 2.37 1.93 2.46 2.46 2.50	1.78 2.37 2.37 2.00 2.12 3.62 2.71 2.71 2.12	1.50 2.37 2.50 2.50 2.37 2.12 2.56 2.56 2.50	2.75 3.50 4.00 3.50 3.87 3.03 3.15 3.15 2.75	No .250 .187 No No No No No No	No No No No No No No Yes	Sp. Pr. Pr. Cs. Pr. Cs. Fl. Pr. Sp. Pr. Pr. Cs. Pr. Cs. Pr. Cs. Pr. Cs.	Gear Gear Gear Gear Gear Gear	Star Stearns Knight Stearns Knight Sterling Knight Sterling Knight Stevens Duryea Studebaker S Studebaker S Studebaker Stutz 69
Velie	0 Own Continental 8 Own 6 Own	8R B68 W-6 65 66	6-3%x4% 6-3%x4% 8-3%x4 6-3%x5% 4-3%x4% 6-3%x4%	8.12 10.50 8.00 8.00 10.00 11.50	52		1.62	4 4 3 7 3 7		2.18 2.34 2.25 3.50 2.31 1.68	2.00° 2.25 1.75 2.50 1.87 2.50	3.00	No No 2.00 No No	No No Yes No No No	Pr. Cs. Pr. Cs. Pr. Cs.	Gear Gear Gear Gear Gear	Velle

Pistons, Pins and Rings Used on 1925 Cars

		ENGINE			1	PISTONS				PISTON	PINS	P IS'	
MAKE AND MODEL	Make	Model	No. of Cyls. Bore and Stroke (In.)	Materia	Length (In.)	Distance from Pin Center to Top of Head (In.)	Weight (Compl. Oz.)	No. of Grooves and No. Above Pin	Diameter (In.)	Length (In.)	Bearing (In.)	No. per Cyl.	Width
American D66 Anderson 41 Anderson 50 Apperson 6 Apperson 50 Apperson 43 Apperson Straight Away 8 Aubura 43 Aubura 8-88	Spillman	91 7U 8R 6 V8 S8 7U 2H	6-3 ½ x5 6-3 ½ x4 ½ 6-3 ½ x4 ½ 8-3 ½ x4 ½ 8-3 ½ x5 8-3 ½ x4 ½ 8-3 ½ x4 ½ 8-3 ½ x4 ½	CI CI CI CI CI CI CI A1	3.50 3.25 4.09 3.50 4.00 3.50 3.25 3.50	1.93 2.50 1.87 2.00	36 27 35 16 27 25	3-3 3-3 3-3 3-2 3-3 4-3 3-3	.87 .87 .87 .87 .93 .75 .87	3.16 1.06 1.37 2.87 2.87 1.06 2.78	Rod Rod Rod Rod Rod Piston Rod	3 3 3 4 4 3 3	% % % % % % % % % % % % % % % % % % %
BuickStandard BuickMaster	Own	Sta. Mas.	6-3 x41/4 6-3 /4 x4 /4	CI	3.81 4.25	2.25 2.44	**	3-3 3-3	.75 .87	2.56 2.93	Piston Piston	3 3	**
Cadillac. V63 Gase. Y Case. X Case. JIC Chandler. SS Chevrolet. Sup. K Chrysler. Sk Cleveland. "31" Cleveland. "43" Cole. 1924 Cunningham. V6	Own Continental Continental Continental Own Own Own Own Own Own Own Own	V63 6T 8R 8R 8S Super. 6 31 43 311 V6	8-3 ½ x5 ½ 6-3 ½ x5 ½ 6-3 ½ x4 ½ 6-3 ½ x4 ½ 6-3 ½ x5 4-3 ½ x5 4-3 ½ x4 6-2 ½ x4 ½ 6-2 ½ x4 ½ 8-3 ½ x4 ½ 8-3 ½ x4 ½	CI CI CI CI CI CI A1 CI CI	3.30 4.37 4.09 4.09 4.50 3.62 3.68 3.59 4.25 4.37 4.06	1.50 2.50 2.50 2.50 1.87 2.00 2.38 2.25	25 41 35 35 41 18 30 28 37	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	.75 1.12 .87 .87 1.09 .85 .75 .96 .86	3.00 1.75 1.37 1.37 2.68 2.70 3.31 3.23	Rod Rod Rod Rod Piston Piston Piston	ଟ ମ ୧୯ ୧୯ ୧୯ ୧୯ ୧୯ ୧୯ ୧୯	% % % % % % % % % % % % % % % % % % %
Dagmar 6-60	Continental Continental Continental Continental Own Own Own Own Continental Continental	8R 6J 7U 8R 25 6-80 8A Y Spec.	6-3 ½ x4 ½ 6-3 ½ x5 6-3 ½ x4 ½ 6-3 ½ x4 ½ 4-3 ½ x4 ½ 6-4 x5 8-2 ½ x5 6-3 ½ x5 4-3 ½ x4 ½	CI CI CI CI A1 CI A1	4.90 4.50 3.25 4.09 4.37 5.25 3.50 4.25	2.50 1.93 2.50 2.75 1.75 2.00	35 46 27 35 28 11 12 24	3-3 3-3 3-3 4-4 3-3 4-4 3-3 3-3	.87 1.12 .87 .87 .81 1.21 .75 1.06	1.37 3.31 1.06 1.37 3.62 3.62 2.50 3.12	Rod Rod Rod Rod Rod Rod Piston Piston	00000000000000000000000000000000000000	No. 1225
Elcar. 4-40 Elcar. 6-50 Elcar. 8-80 Essex. 6	Lycoming Continental Lycoming Own	CF 7U H 6	4-3 1/4 x 5 6-3 1/4 x 4 1/4 8-3 x 4 1/4 6-2 1/4 x 4 1/4	A1 CI CI A1	4.12 3.25 3.50 3.06	1.93 1.68	26 27 25 8	4- 3-3 3-3 3-3	1.12 .87 .75 .75	2.90 1.06 2.78 2.09	Floating Rod Piston Floating	3 3 3	% %
Flint. 40 Flint. 55 Ford. T Franklin 11	Continental Continental Own Own	6W Spec. T	6-314 x414 6-314 x5 4-314 x4 6-314 x4	CI CI CI A1	4.06 3.81 3.84	2.44 1.94 2.18	36 20	3-3 3-3 3-3 4-4	 .74 .87	3.50 2.87	Piston Piston	3 3 4	96 96 36
Gardner		CE H R	4-3 th x5 8-3 x4 1/4 4-3 1/4 x4	A1 CI CI	4.12 3.50 3.62	1.62	43 25 32	4- 3- 3-	1.12 .75 .74	3.31 2.78 3.25	Piston Piston Piston	4 3 3	34 34
Haynes. 60 H. C. S. 66 Hertz. Di Hudson 6 Hupmobile R Hupmobile Ei	Own Own Continental Own Own	60 6 7U 6 R E	6-3½ x4¼ 6-3½ x5 6-3½ x5 6-3½ x5 4-3½ x5 4-3¼ x5¼ 8-2½ x4¾	CI CI CI A1 CI CI	4.37 4.28 3.25 4.06 4.00 3.12	2.00 2.25 2.40 1.78	30 38 27 16 22 19	4-3 4- 3-3 3-3 3-3 3-2	1.12 1.00 .87 1.09 .87 .75	3.12 3.03 1.06 2.68 2.81 2.50	Piston Floating Rod Floating Piston Piston	3 4 3 3 3 3 3	% %
Jewett23-25 JordanA JordanK & L	Own Continental Continental	23-25 Spec. Spec.	6-3½ x5 8-3 x4½ 6-3¼ x4¾	CI	3.79	2.17	28	3-3 3-3 3-3	1.00 .85 .85	2.81 2.51 2.85	Piston Rod Rod	3 3	36
Kissel	Own Own	55 75	6-3 1 x51/6 8-3 1/2 x41/2	CI A1	3.81 3.50	****	::	4- 3-3	.94 .75	3.06 2.81	Rod	3	36
Lexington	Ansted Ansted Own Own	M F 8 48	6-3 + x4 14 6-3 + x5 14 8-3 16 x5 6-4 14 x5 14	CI A1 A1 CI	3.43 3.53 3.75 5.81	1.98 1.81 2.00 3.12	13 66	2-2 3-3 3-3 3-3	1.00 1.00 .87 1.12	3.00 2.93 3.12 3.87	Rod Rod Rod Rod	2 3 3 3	X
Marmon 74 Maxwell 25C McFarlan SV McFarlan TV Mercer 6 Moon Newport Moon Metropolitan Moon London Moon Sorles A	Own Own Wisconsin Own Own Continental Continental Continental	74 25C Y TV 6 7U 7C 8R 7Z	6-3 ½ x5 ½ 4-3 ½ x4 ½ 6-3 ½ x5 6-3 ½ x5 6-3 ½ x5 6-3 ½ x4 ½ 6-3 ½ x4 ½ 6-3 ½ x4 ½	Alt Al CI Al Al CI CI CI CI	4.68 4.12 4.00 6.18 4.06 4.09 4.09	2.56 2.00 3.06	50 21 32 48 27 35 27	3-3 3-3 3-3 3-3 3-3 3-3 3-3 3-3	1.18 .74 1.06 1.25 .87 .87 .87	3.25 3.00 3.12 3.93 1.06 1.06 1.37 1.06	Floating Piston Rod Rod Rod Rod Rod Rod	00000000000000000000000000000000000000	X
Nash Advanced Nash Special Oakland 6-54	Own	161 131 6-54	6-3¼ x5 6-3¼ x4¼ 6-2% x4¾	CI	4.00 3.68 3.31	1.62 1.50	20	4-3 4-3 3-3	.93 .87	3.00 2.87 2.42	Rod Floating	4 4 3	36
Dakland 6-54 Didsmobile 30 Overland 91 & 92 Overland 93		30 92 93	6-2 1/4 x4 1/4 6-2 3/4 x4 1/4 4-3 1/4 x4 6-3 x4	SS CI CI A1	3.31	1.78 1.87	19	3-3 3-3 3-3 3-3	.73 .85 .87 .73	2.50 1.81	Rod Piston Piston	3 3	**
Packard 6 Packard 8 Paige 21-24 Peerless 70 Peerless Equip Pierce Arrow 33 Pierce Arrow 83	Own Own	6 8 10A 70 67 33 80	6-31/4 x5 8-31/4 x5 6-31/4 x5 6-31/4 x5 8-31/4 x5 6-4 x51/4 6-31/4 x5	CI CI CI CI CI	3.37 3.37 4.50 3.50 3.25 5.50 3.87	2.62 1.87 3.25 2.26	26 26 44 39 29	4- 4- 3-3 4-3 3-2 3-3 3-3	.75 .87 1.25 .75 .87 1.06	3.12 2.92 3.34 3.25 3.00 3.51 3.12	Floating Floating Rod Rod Piston Floating Floating	4 4 3 4 3 3 3 3	14 14 14 14 14 14 14 14 14 14 14 14 14 1
Reo. T6 Revere M Revere 25 Rickenbacker D Rickenbacker 8 Roamer 4-5E Roamer 6-54E Rollin G Rolls-Royce 40-50	Monsen Continental Own Own Duesenberg Continental Own Own	T6 M 6J D 8 G1 12XD G 40-50	6-3 % x5 4-4 % x6 6-3 % x5 6-3 % x4 % 8-3 % x4 % 4-4 % x6 6-3 % x5 % 4-3 % x4 % 6-4 % x4 %	A1 CI CI CI A1 CI A1	4.00 4.50 4.06 3.87 4.50 4.25 5.10	1.81 1.75 2.56	20 46 28 26 21 48	3-3 3-2 3-3 3-3 4-3 3-3 4-4 6-6	.98 1.12 1.00 1.00 1.15 .85 1.00	2.87 3.31 2.81 2.56 1.50 2.90 4.25	Rod Piston Rod Piston Rod Rod	33343346	.187
Star	Continental Own	Spec. C B4 S B6 G Std. Spec. Std. Spec. Big 695	4-31/6 x41/4 6-31/4 x5 6-31/2 x5 6-31/2 x5 6-31/2 x5 6-31/4 x41/4 6-31/4 x5 6-31/4 x5 6-31/4 x5 6-31/4 x5	CI A1 CI CI CI CI CI CI CI SS	4.03 4.28 3.87 5.06 3.87 4.68 3.68 4.68 4.12	2.12 2.50 1.93 2.68	20 37 23 26 74 	3-3 4-4 4-4 4-4 3-3 3-3 4-3 4-3 4-3 4-3	.96 .96 .87 1.00 .87 1.00 .87 1.00 1.00	2.87 3.12 3.03 4.00	Rod Piston Ploating Rod Piston Piston Piston Piston Piston Floating	34443334444331	
Veile. 60 Westcott. H44-60 Wills Ste. Claire A & B-68 Wills Ste. Claire W6 Wills-Knight 65 Willys-Knight 66	Own Continental Own Own	50 8R B68 W6 65 66	6-3% x4% 6-3% x4% 8-3% x4 6-34 x5 4-3% x4 6-34 x5%	CI CI CI CI Al	3.50 4.09 3.67 3.67	1.87 1.84 1.84	27 35 27 27	3-2 3-3 3-2 3-2 4-4 4-4	.87 .97 .75 .75 .93	2.87 1.37 3.00 3.25 1.50	Rod Rod Rod Piston Piston	3 3 4 4	% %

Electrical Equipment

Including Ignition Systems, Generator, Starter,

		NITTON -	70	, 1		NIED 1	-0-	ANIT	CTARMS	, 1		Sa	p. ' b	No.			BATTERY		Hd.			LA	MP I	BIII	Be		
	IG	NITION ST	STEN	1	GI		OR	-	STARTER			Start	ing N	No			DATIERI	_	Lt. Lens	Н	ead)im	-	Dash	1	Tail
MAKE AND MODEL					-		Rate	1.	Star	.61		orque	_		neh			Amp. Hrs.		T	T	1	T	-		-	11
MODEL	Make	Mede	Current Source	Spark Centrel	Make		Norm. Chg. Ra	R. P. M. Field Fuse Amp.	Model	Engagement	Lb. Ft.	Votlage	Amps.	R. P. M	Voltage Amps.	Make	Model	_	Outside Diameter	C. P.	Volts	C. P.	Volts	C. P.	Volts	Contact	Volts
nderson 41			Bat.	Hand		35AT1				Bendix						Willard		6-111	9	21		N		1 2	1		2 6
nderson50					Remy			1900	708A	Bendx		3 2 15	1	2600		Willard Presto	SJRN4 613	6-111 6-112	83/4 83/4	21 18		S N S 4	N 1	N 2 S 2			2 6 2 6
ppersonV-8			Bat. Bat.	Hand Hand	Remy Bijur	917W M1729		1900	720H 1378	Bendix Bendix	15	0.15	310	6000	305	Presto	613	6-112		18		8 4		S 2			2 6
pperson St. Away 8					Remy	917W			720J	Bendix						Presto		6-112									
uburn4			Bat.	Hand	Remy					Bendix						Exide		6									
uburn6-43	- 1	366N	Bat.	Hand	Remy	922A	11	1900	720J		15	3.15	570	6000	5 65	Exide	3XC13	6-90	8	21		S 2	-	S 2		-	2 6
uburn8-63	Remy		Bat.	Hand						Bendix		••••				Exide	3XC15	6-105	10	21	6	S 2	6	8 2	6	S	2 6
Barley 6-50	Delco	483	Bat.	Hand	Delco	257	15	1500	840	Bendix	27	2.75	400		6 36	Presto	611SHC	6-80	71/	21	6	S 4	6.	. 2	6	D	2 6
Buick Standard		Spec.	Bat.	Hand	Delco	283		1250	283	S-Gear	6	3	400			Exide		6-90		21			6.		6		. 6
luickMaster			Bat.	Hand	Delco	268	1 1		268	S-Gear						Exide		6-105		21			6.		6		. 6
																	0377 5077 - 010					0	,,			0	
CadillacV-63		Spec.	Bat.	Auto	Delco	98		1250	98	S-Gear	6	3	400			Exide	3XLRV15-2N	6-130		21		S N S 4	N 3	N 2 S 2		-	2 3 2 6
CaseX		5256 5256	Bat.	Hand Hand	Delco Delco	258 258	15	1500	181	Bendix Bendix	27	2.78	400		0/	Willard	SJRG4	6-118		$\frac{2}{2}$ 21		S 4		S 2			2 6
CaseY		5208	Bat.	S-Au.	Delco	258			200	Bendix		1	1				SJRG5	6-135		21	1	S 4		S 2	1	S	2 6
Chandler		T6158	Bat.	S-Au.	A-Bos	T1033	8		5 T935	Bendix	12	4	450	3000	6 6	Presto	613RHN	6-105		21		S 4		S 2	6	S	2 6
Chevrolet K	Remy	Spec.	Bat.	Hand	Remy	Spec.	16	1800 .	Spec.	Bendix	10	3.5	425	5000	5 6	Willard		6-90		21		SN		N 2	1 ~1	S	2 6
Chrysler6		636A	Bat.	S-Au.	Remy	917-T	11	1900 .	. 722B	Bendix	28	3.1	5 570	2500	5 7	Westin	6-C-13	6-105		21		SN	1	N 2		S	2 6
Clevelend		T6230	Bat.	Auto	A-Bos	1060			955	Bendix			480			Presto	6URHK	6-80		8 21		S 4	1	8 3		S	3 6
Cleveland43		T6230	Bat.	Auto	A-Bos	1052	8		5 943	Bendix		4	400	3000		Presto	611RHK	6-80		8 21 2 21	-	_		S 3	1 -1	20	4 6
Cole		Spec. 5218	Bat. Bat.	S-Au.	Delco Delco	153 285		1200 . 1000 .	. 72 183	Bendix Bendix		2.7				0 Willard		6-125 6-130		21 21				8 2		S	2 6
Cummignamv-	Deico	9210	Dat.	S-Au.	Deico	400	10	1000	180	Denuix	24	2.11	1200	1	1 0	W Illair	DUTENO	0-100	1	1		7	"	"			1
Dagmar 6-60	Delco	550	Bat.	Hand	Delco	258			. 181	Bendix						Presto		6-135		. 21	6		6		6		. 6
Dagmar 6-70		564	Bat.	Hand	Delco	258			. 200	Bendix						Presto		6-135		. 21			6		6		. 6
Davis90		257	Bat.	Hand	Delco	257			. 240	Bendix							XR13	6-60		4 21		8 4		8 2		D	4 6
Davis		258	Bat.	Hand	Delco	258		1400	. 181	Bendix		2.7			. 63	6 Willar		6-80				S 4		S		D	4 6
Dodge Brothers 2	N-East	0-10004	Bat.	Hand	N-East	3804	15	1800 .	. 3804	Chain	35		. 225		1.4	Exide	SJR26	12-50	'l' · · ·	. 21	12	SN	N	N .	12	S	2 12
Dorris 6-8	Bosch	AT6	Mag	Hand	Bosch	1233	1		. 751	Bendix							SJRN5	6-139	91	6 21	6	8 4	6	S	2 6	S	4 6
Duesenberg St		2135	Bat.	S-Au.	Delco	242		1400	200	Bendix		2.7	5 400	0	65			6-119		-		S		S			2 6
DuPontI	Bosch	T-M6662	Bat.	Hand	Bosch	1047			. 930	Bendix						. Westin	6-OB-13	6-113		4 21		8 4		S		-	2 6
DurantA-2	2 A-Lite	Spec.	Bat.	Hand	A-Lite	Spec.	15	1850	. Spec.	Bendix	13	5	650	0	. 65	5 USL	3HVX-5X	6-92	85	€ 21	6	8 2	6	D	2 6	S	2 6
Fl	A T:4-	0	P-4	S-Au.	A T.	COATO			3535400	A D 3:						W7:11	VD19	6-90	73	4 21	6	S	6	8	2 6	D	2 6
Elcar 4-4 Elcar 6-5		Spec. CJ197	Bat.	S-Au.	A-Lite A-Lite	CG410 CJ4102		1500 -	. MM400 5 M G400	4 Bendix 3 Bendix		5 5	950	0	64	5 Willard	XR13	6-90		4 21		S				-	2 6
Elcar 8-8		Spec.	Bat.	S-Au.	Delco	256		1000	. 240	Bendix				1		Willard		6-100		. 21		S					2 6
Essex		T	Bat.	Auto	A-Bos.	1043	8	800	5 948	Bendix		4	450	300	0 66	Presto	613JFK	6-10				SN			2 3	S	2 3
																				1	11						
Flint4		Spec.	Bat.	1	A-Lite	Spec.		5 1600 -		Bendix		3	600	500	0 5 4	0 USL	3HVX5XX	6-92		2 21			6		2 6	S	2 6
Flint		Spec.	Bat.	Hand	DeJon				. Sa4001	Bendia				1000	1.1	USL	3HVX6X	6-11	93	2 2	6	B	6		2 6	S	2 6
Franklin 11		T	Bat.	Hand Auto	Own Dyneto	T		900	Spec.	Bendia		5 4 5			0 6	Own Willar	3XC13-1	6-80 6-14	8 83	8 2	6	8	0 8	S	2 3	S	2 3
	Бупен	Брос.	Dat.	11400	DJ He or	opec.	I i	1 000	. opec.	Deliui	10.	2.0	000	1000		THE LINE		0-14	1	1	11		1			П	1
GardnerSeries		288,761	Bat.		Westin	331,32	8		. 297,903	Bendix						Willar	d SJR3	6-94	81	22	6	SI	N	N :	2 6	S	2 6
Gardner		Spec.	Bat.		Remy	Spec.			. Spec.	Bendix						. Presto		. 6-		2	1 6	SIN	N	N	2 6	S	2 6
Gardner"8		Spec.	Bat.		Remy	Spec.	11	1900	. Spec.	Bendi		1	1		1 1	5 Presto		. 6-	1	. 21	6	SI	N	N	2 6	S	2 6
Gray	Westin	SC303,01	Bat.	Hand	Westin	331,27	5		. 331,275	Bendi						USL	CDX311X	6-84	83	8 2	6	S	6	S	2 6	8	2 (
H. C. S Series	Delon	5259	Bat.	Auto	Delco	258	11	1400	. 185	Bendi	24	2 5	5 40	0	8	0 Willar	d SJR4	6-11	7 01	200	1 8	SI	8 8	S	2 6	D	2 6
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HudsonSuper			Bat.		A-Bos.	952			5 926	S-Gear		4				0 Presto		6-120	0 9	2	1 6	SIN	N	N	2 3	S	2 3
Hupmobile. Series	R Westin	JN	Bat.	Hand	Westin	36DT	1		. 33AB	Bendi						. Willar	d XR-15	6-10	0 83	4 2	1 6	SI	N	N	3 6	S	3
Hupmobile E-	1 A-Ken	t RA	Bat.	S-Au.	Westin	36GT			. 59AO	Bendi						. Willar	d	. 6-15	3		. 6				. 6		
Jawatt 92.9	S A-Wa-	IT.A	Rat	S-Au.	P.c.	DASTI	1,	11000	8 7190	Bond!	. 10	2 0	Am	5 500	0 8	W-at	DB12	R 11	5 00	/ 0		9		S	2 6	D	2 0
Jewett 23-2 Jordan K&		Spec.	Bat.		Remy	917U 234		1 1900	6 713C 238	Bendi				5 500 0		55 Westir 66 Willar		6-11	3 89	16 2	0	8	6	20	2 6	S	
Jordan		Spec.	Bat.		Bosch	204		1200	200	. Bendi							d XR15	6-113 6-13	3 85	2	1 6	S	1 6	8	2 6	S	2
	1	1	-			1	1		1	Jonali	1	T	1	1	TT	1	1	1	1	1	1		1				1
Kissel5	Remy	912B	Bat.	Hand	Remy	912B	11	1900	. 720D.	Bendi	15	3.1	5 57	0 600	0 5	5 Willar	d SJRN4	6-11	1 8	4 2	1 6	8	2 6	8	2 6	D	2
I and and an a	10	G _m	D	17	A.D	a.	1		0	P	1			1		Ver. 11.	1 CIDAL			1		0			4	D	2
LexingtonConcor. LexingtonMN			Bat.		A-Bos. A-Bos.	Spec.			Spec.	Bendia					1		d SJRN4	6-10 6-10	0 0	9	1 6	RIN	IN	N	AR	D	2 6
Lincoln		5226	Bat.		A-Bos. Delco	Spec. 193		1250	. Spec.	Bendia S-Gear		3			66	0 Exde	d SJRN4 3LXRV15-2	6-13	5 01	2	1 6	8	N	S	2 3	S	2 3
Locomobile 4		Spec.		S-Au.	Westin				. 366,026	S-Gear							12-11-SHC	6-13	5 9	112	1 12	8	2 12	8	2 12	S	2 15
		1	1			200,10	1.	1	30,020		1	1	1	1	1.1.	1.10000	1	100	1 '	1"	100	~	1"	~	110	1	1

on 1925 Passenger Cars

Battery, Headlight Lens Sizes and Lamp Bulbs

Maxwell25 McFarlanSV McFarlanTV		Model	Current Source	Control		Gen	Rate	tor	16	Start	er		Lock Forqu			Le				Hrs.	Lt. Lens	F	lead	1	Di	im	-	Dash	-	Ta	il
Marmon	Delco Remy	Model		Control			2		14																	1		1 (_
Maxwell25 McFarlanSV McFarlanTV	Remy		3	Spark (Make	Model	Norm. Chg. Ra	R. P. M.	Field Fuse Amp.	Model	Engagement	Lb. Ft	Veltage	Amne		Tes	-	Make	Model	Velts and Amp. H	Outside Diameter	C. P.	Volts	Contact	1 2 2	Contact	C. P.	Velts	Centect	Volts	Caninet
McFarlanSV McFarlanTV		Spec.	Bat.	S-Au.	Delco	253		1250		254	S-Gear	24	2.78	-			6 60	Presto	617SHC	6-170	- 70	21	6			6 8					6 8
McFarlanTV			Bat.	S-Au.	Remy	4914 1A	17	1000	0	712A	Bendix	11	3.6	45	50 500	10	5 65		6-OB-13	6-106	-20		6	S		N					6
			Bat.	Hand	Westin	56A7				711	Bendix							Willard		6-100		21	6	S		6 8	3 2	1 1	D		6 8
Mercer			Bat.	Hand	Westin	781,612				778	Bendix						1	Willard		6-165		21	6			6		6			6
	Eisem Delco	Spec.	Mag Bat.	Hand S-Au.	A-Lite Delco	257	13	1500		240	Bendix Bendix	10	3.1	40	10		8 80	W illard Exide	3XC-13-1	6-132	9½ 8½	21 21	6	S		6 8		1 6	S		6 8
	Delco	Spec.	Bat.	S-Au.	Delco	258	10	1300		181	Bendix	10	0.1	20			000	Exide	3XC-13-1	6-86		31	6	S		6 8					6
	Delco	Spec.	Bat.	S-Au.	Delco	258	1			181	Bendix							Exide	3XC-15-1	6-100		21	6	S		6 8					6
	Delco	558	Bat.	S-Au.	Delco	296				286	Bendix							Exide	3XC-13-1	6-85	813/6		6		N						6
NashAdvanced	Delco	Spec	Bat.	Hand	Delco	Spec.	15	1250	0	Spec.	S-Gear	11	2.7	40	00		6 50	Gould	DSL617	6-117	87/6	21	6	S	2	6 8	3 2	6	S	2	6
	Delco	Spec.	Bat.	Hand	Delco	Spec.				Spec.	S-Gear							USL	3HBF5X	6-90	8	21	6			6 8					6
0akland6-54	Remy	636B	Bat.	Auto	Remy	9178	1	190	0	713B	Bendix	12	3.6	47	75 500	00	5 65	Presto		6-100						N			S	2	7
		566	Bat	Hand	Delco.	000,273				000,274	Bendix							Willard		6-80	75/8					N			S	2 (8
and any age of the same and		TB	Bat	Hand	A-Lite	GP	16	150	0 5	MO	Bendix	1675	5 5	69	90	-	6 50	USL	CDN311X	6-80	81/8		1	S	N I	N	1 2	3	S	2 3	3
Overland93	A-Lite	Spec.	Bat	S-Au	A-Lite	GP				Spec.	Bendix					1		USL	CDN311X	6-80		21	6			-				1	1
	Delco	5249	Bat	Hand	A-Kent	5870	15	900	0	6484	Bendix	3	5.5	20	00 600	00	6 60	Presto	613SHC	6-100	81/2		6	S	4	6 8		6	S	2	6
Packard8		5260	Bat	Hand	Dyneto	CE				DE	Bendix								617SHC	6-100	9	32	6	S	2	6 8		6	S	2 (6
	A-Kent	LA	Bat	S-Au	Remy	917U		190	0 6	7224	Bendix	28	3.1	5 57	70 250	00	5 70		OB-19	6-155	-04		6	S		6 8		6	S	4	6 I
	Delco	005,267	Bat	S-Au	Delco	000,284				00,282	Bendix							Exide	3XB	6-110		21	6			6 8					6
Peerless Equip.8		5250	Bat	S-Au	Delco	0258	15	140	0	0257	Bendix	11	2.8	40	00	-	6 60		3XB	6-135			6	S		6 8		1 1		2 (6
Pierce-Arrow33		Spec.	Bat	S-Au	Deteo	279				252	S-Gear						: ::	Willard		6-162			6			6 8					6
Pierce-Arrow80	Delco	Spec.	Bat	S-Au	Delco	300	15	120	0	297	S-Gear	40	2.7	5 40	00		6 50	Willard	SJR4	6-111	. 83/8	21	6	S	4	6 8	3 2	6	S	4	6
Reo		MAT	Bat	Hand	N-East	MAT			. 6	35-81	Chain	10		. 47	70			Willard		6-111		21	6	8		N			8	-1	6
RevereM		Z4	Mag	Hand	Westin	1055	1:				Bendix			1:			100	Presto	SHG2	6-100		16				6 I			D	-	6
		T614A 5276	Bat Bat	S-Au	A-Bos A-Bos	1055	8	80	0	933	S-Gear S-Gear	20	3.5	DU	00 200	100	6 60	USL	3CVX-6X 3HVX8X	6-106		21 21		D		6 8		1	8	2	6
Rickenbacker A Roamer 4-75-E		ZR4	Mag	S-Au Hand	Westin	781R				778	Bendix							Presto	613SHC	6-117			6	S			3 2	1 1	S	2 2	6
	Split	649	Mag		Westin	760				711	Bendix	1		1.				Presto	613SHC	6-117	-, 0			S			8 2	1	D	2	6
Rollin	Connec	373-2Y	Bat	S-Au	Dyneto					Spec.	Bendix	1		1				USL	3CVX	6-105		21	6				S 2	1		- 1	6
and the second		Zr6	B&M		Westin	Spec				Spec	Mag. Sl	h						Exide	3XX	6-120	-						S				6
Star4		Spec	Bat	Hand	A-Lite	Spec		160	0 8		Bendix	16	5	6	50		6 50	USL	3CBG5X	6-80	73/4						. 2		-	-	6
		RA4002	Bat	Hand	DeJon	DC400	1			SB4003	Bendix							Willard		. 12-85	-6.4		12	S		2		12	-		2
Stearns-Knight B		Spec	Bat	Hand	A-Lite	Spec		100		Spec	Bendix				78 80			Exide	6XC13-1	12-8			12	8			-	2 2		2 1	2
Stearns-KnightS Sterling-KnightB6	DeJon	IA4004	Bat Bat	Hand	DeJon Westin	DC400:	1 12	120	0	SB4003	Bendix Bendix	28	4	8	75 50	UU	5 40	Willard USL	6HVX4X	12-8		21 21	12	-	2		-	12		:	
Stevens-Duryea G		JN ZR6	Mag	Hand Hand	A-Bos	1205				755 1119	Bendix							USL	3HBX-HZ	6-120		(21	12		4		-1	12 6	S	2 1	6
Studebaker Std.6		K815	Bat	Auto	√Wagne		111	200	0	S532	Bendix		3 1	5 5	70 60	00	5 85	Willard		6-90			1 1		4			6		2	6
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Studebaker Spec.6			Bat	Auto	Wagne	1 >				S503	Chain	1						Willard	SJR4	6-11	1 91	21	6	S	4	6	S	2 6	S	2	6
	Remy	626L			Remy	917E				723A													1								
Studebaker Big 6	Wagne	K14	Bat	Auto	Wagne	S503				S503	Chain							Willard	SJR4	6-11	1 91	6 21	6	S	4	6	S	2 6	S	2	6
Stutz693-4-5	Remy	626L Spec	Bat	S-Au	Remy	917E Spec	11	1 190		. 723A Spec	Bendix	15	3.1	5 5	70 60	00	5 65	Willard	SR5	6-12	0 83/	1 21	6	 S	4	6	S	2 6	· · · · · · · · · · · · · · · · · · ·	2	6
Velie 60						3952					Bendix									6-90	193	2									1
		JA	Bat	Hand	Westin					31188								Willard										2 6	П		6
Westcott		5256	Bat	S-Au	Delco	258	1	5 140	1	. 181	Bendia				100		6 36	Wilard		6-11	8 8%	4 2	1 6	S	4	6	S	2 3	D	2	3
Westcott60	Delco	5256	Bat	S-Au	Delco	258				. 181	Bendix							Willard	XW15	6-10	1 8	15	1 6	S	N	N	N	2 0	D	2	6
Wills Ste. Claire	Dolos	Spec	Ret	Auto	Delas	Q	1	100	100	See	S-Gear	10	3		100		8 90	Willare	STDS	6-14	10			0	0	0	0	2	0		
A&B68 Wills Ste. Claire W.6		Spec	Bat Bat	Auto	Delco Delco	Spec	1	120		. Spec	Bendia		3	4	100		0 00		SJR5	6-14		2				6			8		6
Willys-Knight . 65&67		Spec	Bat	Hand	A-Lite	Spec	1	6 150	00	. Spec 5 MH	Bendia		5	7	700		6 3	USL	HDN-317X		70 83			S					S		6
Willys-Knight 66		Spec	Bat	S-Au	A-Lite	GJA	1	100	1	MN	Bendia		10	1		* * *	0 00	USL	HDN-317X		70 83						2	2 3	S		3

ABBREVIATIONS: A-Bos—American Bosch A-Lite—Auto-Lite
Auto-Lute—Automatic
B&M—Battery and Magneto

Bat-Battery Connecticut
D—Double Eisem-Eiseman King-Kingston

L-N-Leece-Neville

Mag—Magneto
Mag.Sh.—Magnetic Shift
N—None
N-East—North-East
Presto—Prest-O-Lite

S-Au-Semi Automatic S-Gear-Sliding Gear Spec.—Special
Split—Splitdorf Westin-Westinghouse

The READERS' CLEARING HOUSE

Questions and Answers on Dealers' Problems
BUILDING - ELECTRICAL - FLAT RATES
SHOP - LEGAL - PAINT & TRIM - ACCOUNTING

Ford Timing and Tappets

Q.—I have a Ford in the garage that has adjustable push rods. They have been set at 10 and 12 thousandths clearance and the car has been working o. k. I am supposed to remove the camshaft and put in new bearings and front gears. In some of your issues you claim a Ford valve clearance should be 20 or 30 thousandths clearance or you get the timing out. Now what I want to find out is your advice in retiming this engine as the owner wants to be able to adjust these tappets up closer as he sees fit.

What would be the result if I set the camshaft sheed one tooth or would you

What would be the result if I set the camshaft ahead one tooth or would you advise me to set it one notch behind and rely upon the adjusting screw to make up the difference? What the owner wants is so that he can take them up to about .006 or .008 clearance to keep them more quiet. I would like to have your frank opinion as soon as possible as I am anxious to get this car out on the road again and settle their question once and for all as they tell me it can't be done.—Harry Lobenstein, 9331 Navarre street, Detroit, Mich.

Tappet Clearance Advised

We would not advise a closer tappet clearance than .010. If all of the tappets have the same clearance, such as .010 you will find that they are as quiet as they would be if one had .003, one .005 and the rest of them .006. In other words a uniform setting makes a less audible sound than does close setting, that is non-uniform. The following method of timing is recommended in the latest issue of the Ford service bulletin: The piston of the cylinder being timed is first brought to top center. A scale is then laid across the piston and the distance from this scale to the top of the cylinder is measured. The engine is then turned to bottom center and the distance from the piston to the top of the cylinder block is measured again.

This is the bottom center. For example the top center is 5/16 above the face of the cylinder block and the bottom center is 3 11/16 below the face of the cylinder block. On engines built since 1919 the exhaust opens when the piston reaches 5/16 inch from bottom center. The distance from the top of the piston head to the top of cylinder measuring 3% inches. The exhaust valve will close on top center the piston being 5/16 of an inch above the cylinder casting. The inlet valve opens 1/16 of an inch after top center and closes 9/16 of an inch after bottom center. The distance from the top of the piston to the top of the cylinder casting measures 31/8 inch. The clearance between the push rod and valve stem should be greater than .030 or less than .010. The correct clearance is half way between these two measurements. The gap should be measured when the push rod is on the heel of the cam.

We would advise against changing the timing at the gears and believe that you should set each cylinder as outlined then check the tappet clearance after each cylinder has been timed. After this is done, average up all of the tappet clearances so that they remain the same on all, except that the exhaust valve tappets should have about .002 more clearance than the inlet when measured with a cold engine or the same amount when measured with the engine at normal temperature.

WHAT MAKES IT CLICK?

Q.—We have a Ford car that has a click that sounds like a valve click. It is only noticeable when idling. I have ground the valves and adjusted them to .004 clearance. I have taken out the pistons and connecting rods and find them to be in good condition. This is a new car and the click developed only recently. I would like to know what this can be. I have all issues of Motor Age on file and I would like to have page 17 of the Motor Age of May 22nd, 1924, that deals on engine knocks and their elimination.—Service Garage, 24 N. 16th Street, Keokuk, Iowa.

This may be a sticking valve. Would also advise that the tappet clearance be increased to the Ford standard. Page 17 of the May 22nd, 1924, Issue of MOTOR AGE dealing with engine knocks and their elimination is being sent you under separate cover.

The Readers' Clearing House

THIS department is conducted to assist dealers and maintenance station executives in the solution of their problems.

All questions are answered direct by letter, so the name and address should be given in full. This saves waiting for the answer to be published, which sometimes occurs several weeks late, depending upon the space available.

Readers' names will not be published with articles, if a request to this effect is received with the letter.

Inquiries not of general interest will be answered by personal letter only. Emergency questions will be replied to by letter or telegram.

Also state whether a permanent file of MOTOR AGE is kept, for many times inquiries of an identical nature have been made and these are answered by reference to previous issues.

Addresses of business firms will not be published in this department but will be supplied by letter.

Technical questions answered by B. M. Ikert, P. L. Dumas and A. H. Packer; Legal, by Wellington Gustin; Paint, by G. King Franklin; Architectural, by Tom Wilder; Tires, by a Practical Tire Man; General Business questions, by MOTOR AGE organization in conference.

Changing Partners

Q.—Please give me your opinion on the validity of a lease described as follows:
In 1923—A owns a garage property, and leases same to B for a term of five years, with an option for another five years. The lease contains the usual clause that the renter cannot sublease or assign the lease without the consent of the owner. In 1924 B forms a partnership with C. Later this partnership is dissolved and again B forms a partnership with D. About the 15th of December, 1924, B disappears and has not been seen or heard from since. D is now conducting the business, B's share being held by his wife and father. The lease has not been altered whatever during all these changes.—Illinois Reader.

You present an interesting question and my opinion is given only to guide one in taking action on such a proposition. In the first instance, the courts will ordinarily catch upon any reasonable excuse to avoid the provision against subleasing or assigning without the consent of the owner. For instance, if O has accepted rent money from the partnership and from C or D that will be taken as evidence that the landlord A has consented to a subletting or assigning of the lease, thereby waiving the provision involved. That is, if A has been receiving and accepting the rent from D he may not later deny that he did not consent to a subletting to the partnership or to D. The fact that B disappears does not necessarily result in a breach of the contract-lease, if A is being paid and accepts the rent money from D or B's agents. Who can say at what time B may appear and assert his rights under the lease if A should attempt to dispossess him or his agents?

WEIGHT DISTRIBUTION AND ENGINE SPEED

Q.—Please tell me which axle of an automobile carries the most weight when empty.—Davis Motor Co., 117 East Duke street, Hugo, Okla.

It depends on the individual make of car but generally speaking, the rear end carries a few pounds more weight than the front when the car is empty. In some cases the opposite holds true and on a very few the weight in front and rear is identical.

Q.—Will you kindly furnish me with the following information as to the r.p.m. at 45 miles per hour of a 1924 Nash six and a Chrysler and oblige?—Cleveland Sub-

On the Nash advanced six with a gear ratio of 4.50 to 1 and 33 inch tire diameter the engine would be turning approximately 2000 revolutions per minute at 45 miles per hour. On the Nash special six with a rear axle ratio of 4.99 to 1 with 31 inch tires the engine would be turning approximately 2400 revolutions per minute at 45 miles per hour.

On the Chrysler the engine would turn 2300 revolutions per minute.

The Readers' Clearing House

READERS CLEARING HOUSE

A 1914 North East M. G. for Battery Charging

Q.—Advise us how to connect up a Northeast motor generator, 16 volt type taken from a 1914 Marmon, so as to use it for a generator for charging radio batteies. It has five terminals brought out on the driving end of the generator. Give an idea of the output at different speeds and advise if harm will result to the battery or generator, if it is used to charge one six-volt batery at a time. I have heard of this being done but it does not sound plausible to me.—Carl Foster, No. Lanchester, Ind.

A.—Our recommended method of doing this would be to discard the current regulator and in its place connect a rheostat. You may have to experiment somewhat with a rheostat and with the generator speeds. Charging a six-volt battery will do no harm and we believe it will be safe to charge either one or two six-volt batteries in series, in which case the switch shown would be in either the six or 12 volt position.

FITTING PINS TO ALLOY PISTONS THAT HAVE NO BUSHINGS

Q.—I am replacing a set of piston pins in a Haynes 12-cylinder motor which is equipped with Lynite pistons. How tight an adjustment or pull on scale in pounds should they be?—Earl Yeager, Elliott, Ill.

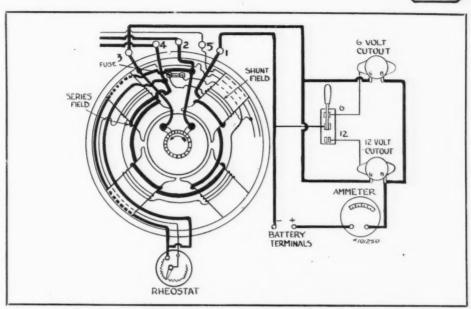
A method of checking the piston pin tightness by means of a spring balance applied at the end of the connecting rod was shown on page 45 of the May 22nd, 1924, issue of Motor Age. Additional information was also given on an insert in the November 6th, 1924, issue, which was our winter service number. With the piston cold a pull of from 6 to 8 pounds to turn the rod is considered good practice. From 2 to 4 pounds might be permissible but is not ideal and if visible clearance is evident the parts should be renewed.

Another method of checking is to make sure that there are no burrs to interfere with the passage of the pin through the hole in the piston. Then immerse the alloy piston in water which is boiling until the piston is thoroughly heated. Then quickly take the piston out of the water and push the piston pin in place. It should be an easy push fit with the hand, similar to the push fit which is desirable when fitting a pin to bronze bushings in a cast iron piston.

MAGNETO NOT EASILY CONVERTED FOR BATTERY IGNITION

Q.—I would like to get some information on a Harley Davidson motorcycle. Magneto is weak and makes it start hard. We had the magnets off and recharged them. Also cleaned the magneto but this did no good. Is there any way this magneto can be wired up for battery ignition using the magneto as a distributor. If so, please send diagram. This is a 1913 Harley.—W. J. Schmadeke. Schmadeke Auto Service, Clarksville, Iowa.

We would recommend having the magneto repaired. It is possible that the interrupter contacts are burnt so that the layer of platinum is gone. In this case



Rheostat replaces regulator on this battery charging outflt

new contacts would be needed. If you will clean up the contacts carefully you may be able to see the line where the layer of platinum is welded to the contacts. It is also possible that the winding itself is punctured or that there is leakage in the insulation so that a new winding will be required.

If you have no facilities for magneto repairing or testing it would be well to get in touch with some good electrical shop, preferably one acting as authorized dealer for the concern which made the magneto. We do not believe it would be practicable to try to make this into a battery ignition outfit.

DETAILS OF DORRIS CARS

Q.—Please give me information about the overhead valve Dorris car. How many main bearings are used?—Frank Boehne, LeSueur, Minn.

Dorris engines for the past six years have had seven main bearings.

Q.—What kind of lubrication has this engine and is the plunger eccentric or gear type?

Lubrication is pressure to the crankshaft and connecting rod bearings and the gear type oil pump is used.

Q.—Are cylinders cast in block or in parts?

The cylinders are cast in blocks of three cylinders each. In other words there are two cylinder blocks in this engine.

Q.—Is camshaft run by gears or chain? By helical gears.

Q.—What type springs are used and is drive shaft enclosed in torque tube or open type?

Springs are one-half eliptic front and rear. Both the propulsion and torque are taken by the springs which means that the drive shaft is of the open type. This information applies to the 1924 model Dorris and as far as we know for all models built previously, back to and including 1921.

CADILLAC CARBURETOR ADJUSTMENT

Q.—I have a Studebaker light six, 1923 model, and would like to know if I can get overhead valves for it. Where can I get them and what will they cost?—Frederick's Garage, Ellisville, Ill.

We do not know of any firm building overhead valve outfits that can be applied to the Studebaker light six engine.

Q.—Can a Hupmobile R engine be installed on this car?

It is possible that the installation could be made by revising either the frame or the engine suspension but before you go ahead on it would suggest that you secure installation drawings giving the dimensions that have to do with the engine installation for both engines, and then compare them. The drawings referred to may be secured from the manufacturers of the respective cars.

ON WHAT MODEL, PLEASE?

Q.—Give us directions for adjusting the carbureter on a Cadillac engine No. 551865. We are having trouble with it. It is used as a wrecker and any information will be appreciated. I believe that this was in one of your issues several months ago but we have misplaced it.—Edgar L. Best, 1523 53rd street, Charleston, Ill.

We would suggest that in the future that you supply us with the car serial number or the year of manufacture, so as to enable us to give you definite information. In most every case the engine number has no uniform hook-up with the car serial number and it is impossible to identify the year model from the engine number.

In the November 27, 1924, issue of Motor Age, a clipped copy of which we are sending you under separate cover, is an article covering adjustment of the model 59 Cadillac carbureter.



The Readers' Clearing House

Make Contract Reasonable

Q. In reading "Motor Age" a few weeks ago, I saw an article on time payments on repairing cars and was very much interested in it so got busy and drew up a contract for repairs. I also figure on selling tires and batteries on this. Would you mind looking it over and telling me just what you think of it; also, can you suggest any way to shorten this and still be good?—Washington Reader.

You have a very complete agreement in your contract, but can you get business with it? Such a contract seems to be necessary to secure the garagemen in some cases, but I fear such would scare away good business and provoke litigation in other cases. The contract partakes of a conditional sale and would operate as a mortgage, at least. Where it provides compensation to the garagekeeper for an amount greater than the agreed sum and reasonable damages arising by reason of default on the customer's part, it is open to attack in the courts as being a contract with a penalty attached, which is not favored by courts and where damages for breach of contract in such cases are found to be a penalty, same will not be allowed. Of course, the contract has this merit, that one certainly can collect all that is actually due, and cause a customer to settle on a reasonable basis rather than risk a suit. As the contract now reads, a garageman under it becomes practically a mortgagee, and should he proceed to pay off prior claimants, he would still be only a mortgagee, unless he secured a better position, as by assignment, as in the case of a seller who has retained title under a conditional sales contract and recovers

Contract Comprehensive

The contract is comprehensive and inclusive, but is unnecessarily long. For instance, matters that the law determines are included. It may be information for the parties, and may preclude disputes between them, but does not change their position or rights. As example, the last clause providing that the contract will not preclude the garagekeeper from his right to file any lien under the law, is unnecessary and changes nothing. No agreement is needed to do what the law directs may be done. But where there is an agreement for one to give up his right under the law, that should be included. Now, the customer might well insist that a clause be inserted that in view of the advantages given the garageman, he relinquish his right to file any other lien claims covering the repairs.

Nor is the garageman interested in subsequent contracts and liens of the customer, as a matter of law, where his is prior and paramount, unless he desires to inform the customer as to the law on the subject. An agreement not to contract would not, ordinarily, be binding on a third party who did contract with one, etc.

Two Transmissions Wanted

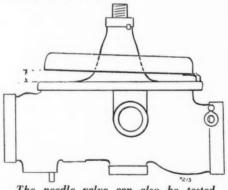
Q.—We have been interested in getting an auxiliary transmission for an Oldsmobile truck % ton and as we do not seem to find this listed in a number of publications we have scanned over, perhaps you would be in a position to advise us where this might be obtained.—Wohlenberg Auto Company, Spirit Lake, Iowa.

A thorough search of our records fails

A thorough search of our records fails to disclose information you desire. It is doubtful whether such a transmission is built for application to the Oldsmobile truck.

Method of Adjusting Gasoline Level in Carbureter

Q. Some time ago I asked you about adjusting the gasoline level in the Holly and Kingston carbureter used in the Ford. You explained very clearly how to check the level in the old Holly carbureter used on the early model Ford, with the use of a gauge for this purpose. You said this would apply also to the Kingston but that was all you said about it. In the old Holly carbureter by removing the cap into which the adjusting needle is screwed and by taking out the three round headed machine screws and with the carbureter set level in the usual way to a supply of fuel you can easily see the height of the gasoline in the small well. In the Kingston and late model Holly model NH there is no way that I know of that you can see the height of the gasoline. Will you please tell me how I can adjust the gasoline level in these late model carbureters o I will know that it is right.—Carlos Farris, Tilford, Ky.



The needle valve can also be tested when checking float level

To check the float level on either the new model Kingston or new model Holly carbureters it is necessary to remove the carbureter from the car and dismantle it. Invert the portion of the carburetor body that carries the float and with it set as illustrated at Fig. 213 measure the distance of the float to the metal on that side of the float directly opposite the hinge. On the Kingston the distance should be 7/16 of an inch and on the Holly $\frac{1}{2}$ inch. While the carbureter is thus inverted it is advisable to suck on the gas inlet to test the seating of the float needle valve. If the valve is holding securely the end of the tongue should be drawn into the bore of the inlet and there should be a resistance when you attempt to remove the carbureter from the tongue.

Timing Cadillac Valves

Q.—I would appreciate the dope on the following concerning the model 57 Cadillac car

lac car.

1—Correct breaker contact points adjustment?—Ernest J. Camy, 316 Broadway, Fresno, Cal.

The contact points should be so adjusted that they stand .020 of an inch apart.

2-The correct ignition advance?

The ignition should be set so that the spark occurs on top dead center in the retard position. With the controls in full advance position the spark should occur when a point on the flywheel 1.21/32 inches in advance of the center line for No. 1 cylinder is directly under the pointer attached to crankcase of the engine. This point for each cylinder is marked on the flywheel by the letters "IG/A." In other words the point where the spark should occur on advanced position is designated on the flywheel by the marks just mentioned.

3—What is the correct inlet and exhaust valve tappet adjustment in thousandths?

The recommended clearance is .002 to .003 of an inch when the engine is cold. It should be borne in mind, however, that adjustment of the tappets on this Cadillac engine is accomplished considerably different than would be done on a conventional engine. In other words, due to the contour of the cams it is necessary to adjust the tappets when the cam followers are resting on a certain portion of the heel of the cam and at no other place. To place a cam in position for properly adjusting the tappets proceed as follows:

Open Compression Relief Cocks

Open the compression relief cocks on the cylinder blocks and with the ignition switched off crank the engine slowly by hand in the direction in which it runs until the piston in the cylinder in which the valve is located is at the end of the compression stroke, or in other words. on firing center. This may be determined by placing the finger over the compression relief cock while cranking the engine. When the piston is exactly on firing center the pointer attached to the crank case will then be directly over the mark on the flywheel indicating "center" for that cylinder. For the inlet valve select the first "IN/S" to the left of the center mark and mark it with a piece of chalk. Crank the engine further by hand in the direction in which it runs until that "IN/S" is directly under the pointer. It will then be necessary to crank the engine nearly a complete revolution. The cam is then in the correct position for adjusting the tappet operating that inlet valve.

If the valve operated by the cam is an exhaust valve after cranking the engine to the proper firing center, select the first "EX/S" to the right of the center and proceed in similar manner.

EDITORIAL

Every Man to His Trade

NO scientist would consider *Judge* an authority on science however much he might enjoy its humor.

No engineer would be influenced by engineering discussions in the newspaper.

No automobile owner reads trade news for consumer information.

No automotive dealer examines general media for automotive news.

Every man to his trade and every trade to its publications.

Reaching the trade through the trade press is reaching the user through his authority.

Sales and Service

AT this time of year it is hard to separate sales and service. This is the best selling season and it also is the busiest time in the repair shop. It is appropriate, therefore, that this first Sales and Service Reference Number of MOTOR AGE should be published at this time.

This issue brings together three classes of valuable information for the business man engaged in the automotive industry:

- 1. That which is of educational value, showing the growth and progress of this industry and holding inspiration for the future.
- 2. That which is helpful in the every day business of selling automotive products.
- 3. That which may be used profitably in the service station or repair shop.

To provide information of this kind is the every week function of MOTOR AGE. But in this issue we have undertaken to collect and interpret some of the fundamental facts and present them in a correlated manner that will make them readily available for reference.

Foreign Trade

WITH the National Automobile Chamber of Commerce putting forth special efforts to stimulate the foreign market for American automobiles and with increasing activity by different American companies to cultivate larger foreign markets, 1925 is likely to ring up a new record in this country's car and truck exports.

Most encouraging reports regarding the foreign trade trend and outlook are received. Substantial gains have been made by practically all American producers who have been strongly after the overseas business.

The success realized by these producers is causing others to consider more extensive campaigning abroad.

It is too rich a field in all potential aspects to disregard and in all probability the future will witness constantly increasing efforts on the part of American manufacturers to get a large share of the European volume as well as generous helpings in other parts of the world.

This year might be remembered in the future as the pivotal period of the American industry's drive for foreign patronage. At least there is a greater determination now than ever before to cast abroad for larger business and there is a concentration that has never been known before in both study of the foreign situation and in actual steps of cultivation.

Larger business abroad and larger foreign profits for the manufacturer will not displease the American dealer. Broadly, the dealer glories in the manufacturers' prosperity and all things contributing to his prosperity. It makes for a stronger manufacturer.

While more outlets for cars abroad might at times serve to relieve factory pressure in this country.

Tourists and Accessories

INDOW displays of accessories have proven profitable even for the crossroads garage. With the tourist season approaching it is well for even the out-of-the-way automotive establishment to plan for the capture of this transient business. A window display will remind motorists of articles they need. If the house has no suitable window a portable display case on the sidewalk is not a bad idea. Such a device can be placed near the gas pumps where it will not be easily overlooked. Of course it should be kept neat and clean—and provided with a lock.

The Fit and the Unfit

THERE was a net loss of 5,000 individuals in the country's dealer population between September, 1923, and September, 1924.

While C. A. Vane, general manager of the National Automobile Dealers' Association, sees nothing alarming in this or in the downward tendency he predicts a further reduction in 1925.

It is inevitable that some will step out this year. They will not, however, be dealers who apply sanity and genuine enterprise in the conduct of business. They will be, as a rule, simply those who are not fit to survive. That is the class which makes up most of the year-after-year eliminations. Those fit to survive will find plenty of opportunity for good business and good profits. Any automotive merchant with the natural qualifications can be among the survivors if he puts them to use.

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Conservatism to Rule Activity of Makers

Parts and Equipment Orders Now Show Slight Falling Off

Demand for Cars Still Strong With No Sign of Slackening—March Close to Record Month

NEW YORK, April 27.—Although production and sales of automobiles are being maintained at the high rate that was established early this month, and delays in meeting orders are common in the industry, car makers are not gambling on a continuation of the current activity for many weeks longer.

There are no signs of a slackening of demand on the horizon, but the general business situation is such as to inspire caution. The slowing up in several important industries that recently became evident may react upon automobile sales, despite the fact that agricultural conditions, as affecting the demand for cars and tractors, are regarded as generally excellent. Even the wheat farmers are buying more liberally than was expected earlier in the season.

Conservatism Shown

The conservative policy of automobile manufacturers is shown in reports by parts and equipment makers. They receive orders for their products from 30 to 60 days ahead of the production of the finished car, and recently these orders have been falling off, indicating that the manufacturers are prepared to slacken production late in May or early in June, if the market situation calls for retrenchment.

In a sense, this represents no more than the normal seasonal trend, but production during December, 1924, and the first two months of this year was at such an unusually slow rate that the period of peak output might well be expected to continue longer into the late spring and early summer.

The figures for March production of trucks and buses, showing that that month was virtually on a par with the record month of the industry, bear out earlier predictions that more commercial vehicles will be sold this year than ever before. This upward trend may slacken, however, since truck production bears a more intimate relation to the state of general commercial activity than any other branch of the industry. On the other hand, the outlook is for a steady advance in production and sales of buses.

Considerable interest is being taken in developments in the time sales division of automobile merchandising. The National Association of Finance Companies has found it desirable to reaffirm a principle established some time ago, to the effect that the sale of automobiles on the basis of an initial payment of less than one-third the cash involved is unsound. There is nothing to indicate, however, that the limit of caution has been over-reached to any considerable degree.

Celebrates 15 Years as Hudson Dealer

ATLANTA, Ga., April 22.—A notable achievement in automotive circles in the southern territory was established this month by the J. W. Goldsmith, Jr.-Grant Co. of Atlanta, when that organization commemorated its fifteenth anniversary in the automotive dealer field, during which period the firm has been headed by the same man—J. W. Goldsmith, Jr. It is one of the two oldest automobile firms in the South in the dealer and distributor field, and is also one of the three original Hudson dealers who are still handling this car in the United States who started with the company when the Hudson first was placed on the automobile market.

Automotive Equipment Mart to Be Formally Opened May 22

CHICAGO, April 25.—Arrangements have been completed for the formal opening here on May 22 of the Automotive Equipment Mart to be permanently maintained by the Automotive Manufacturers Association at 1315 South Michigan avenue.

This action was taken at a recent meeting of the board of directors of the Association when W. E. Green, the secretary, was placed in charge of the mart. He will have complete charge of all the exhibits and will be assisted by a specially selected staff.

An entire floor has been leased at the new address, with provisions that enable the association to secure more space when the occasion arises. The location is ideal, being situated at the "head" of the Michigan avenue automobile row and within walking distance of the loop district.

TO HAVE FLAT RATE SYSTEM

CLEVELAND, April 25.—The Cleveland Automobile Co. announces that within a few weeks it will issue to its dealers a complete flat rate system covering the various models of Cleveland cars.

Week of April 11 Best in History of Dodge Brothers

DETROIT, April 25.—The week ending April 11 was the best in the history of Dodge Brothers Co., officials declare.

With retail deliveries aggregating more than 7,000, an average of more than 1,300 each production day, the best previous week was easily surpassed. New retail orders exceeded the corresponding week of 1924 by 1,000.

Although 1,100 cars are being built a day, deliveries and new orders are 200 a day in excess of production.

New Detroit Ford Weekly Payment Schedule Made Public

Roadster Can Be Had for \$12.40 With Touring at \$12.60—Notes to Be All Paid in Year

DETROIT, April 25.—The payment schedule for Ford cars under the plan being tried in Detroit by Ford dealers is as follows:

	Down	Weekly
Tr.	aymnt	Paymnt
Roudster	\$12.40	\$5.00
Roadster with starter	18.80	7.00
Roadster with starter and		
balloons	20.80	7.00
Touring	12.60	5.00
Touring with starter	17.00	7.00
Touring with starter and		
balloons	17.00	7.50
Coupe	20.80	10.00
Coupe with balloons	23.80	11.00
Tudor sedan	40.20	12.00
Tudor sedan with balloons	68.20	12.00
Fordor sedan	83.40	13.00
Fordor sedan with balloons	111.40	13.00

The basis of payment is the delivered price in Detroit, which includes tax and handling charges, and is approximately 10 per cent higher than the list on the lower priced models and somewhat less on the higher priced.

Under the schedule of payments the purchase price is not necessarily completed in one year, but it is so arranged that only small balances are carried over, notes being renewed. These balances range from \$24 to \$90. It is expected that payments will be completed without the necessity of carrying notes beyond the 12 months period in the majority of sales under the plan.

"Sport" Touring Model Makes Appearance in Lincoln Line

DETROIT, April 27.—A sport touring model has been added to the Lincoln line by Ford Motor Co., the list price on which is \$4,500. Among more important items of standard equipment are six wire wheels with balloon tires, front bumper and rear fender guards, windshield wings, folding trunk rack, nickeled windshield frame, and durable top of special material fitted over mahogany wood bows. The top folds back very flat and is covered with snug-fitting top boot of same material. Upholstering is in the plain paneled effect of dual-tone leather.

HUDSON REVISES PRICES

DETROIT, April 27.—A revision in the prices of the Hudson coach, five-passenger sedan and the seven-passenger sedan is announced by the Hudson Motor Car Co. The price on the coach is now \$1,250 as compared to \$1,345, on the five-passenger sedan \$1,695 as compared to \$1,795, and the seven-passenger sedan is now \$1,795 as compared to \$1,895.

Automotive Parts Association Is Formed by Manufacturers

Is Outgrowth of Parts Distributing Stations—Geo. W. Yeoman Elected President

DETROIT, April 25.—National Automotive Parts Association has been formed here as a new organization for the promotion of better merchandising methods among members, closer cooperation with manufacturers whose products are handled, and improved service to the motoring public. The new organization is an outgrowth of the group of parts distributing stations established three years ago by leading unit parts manufacturers.

George W. Yeoman President

George W. Yeoman, until recently vicepresident of Continental Motors Corp., is president. The membership comprises 38 major parts distributing stations and 393 sub-stations all individually owned.

Other officers of the association are H. G. Root, Springfield, O., vice-president, and L. B. Fijux, Detroit, secretary and treasurer. The directors are, in addition to the officers, C. C. Colyear, Los Angeles, W. W. Martin, Pittsburgh, A. F. Baxter, Buffalo, Estel Scott, Kansas City, R. W. Boozer, Indianapolis, and R. F. Stahl. Chicago.

Manufacturers Named

Manufacturers for whom replacement parts are distributed by the new organization include the following: Continental Motors Corporation, Brown-Lipe Gear Co., Timken-Detroit Axle Co., Timken Roller Bearing Co., Borg & Beck Co., Spicer Mfg. Corporation, Oakes Co., Automotive Parts Co., Warner Gear Co., McQuay-Norris Mfg. Co., Automotive Gear Works, Toledo Steel Products Co., Diamond State Fibre Co., John C. Hoof Co., Hide Leather & Belting Co., Bunting Brass & Bronze Co., Farran-oid Co., Pierce Governor Co., Monarch Governor Co., Laminated Shim Co., Hartford Automotive Parts Co., Morse Chain Co., Strohm Ball Bearing Mfg. Co., Cincinnati Ball Crank Co., Fitzgerald Mfg. Co., Indiana Piston Ring Co. and other companies manufacturing small items.

Under the plans of the association members will carry replacement parts for every service requirement, selecting one representative make for distribution. New lines of merchandise, all leaders in their respective filds, will be added to the present list of accounts within the immediate future until the service line is completely rounded out.

ACCESSORY SALES GOOD

CLEVELAND, April 25.—Motor accessory companies in this city are showing increased earnings as a result of better conditions in the automobile industry generally. Sales of cars that have mounted in recent weeks are reflected largely in greater earnings of accessory companies.

REGISTRATIONS ARE DOWN

CHICAGO, April 25.—New car registrations in Chicago and Cook county for the first quarter of the present year fell 296 as compared to the same period in 1924, according to figures compiled by the secretary of state at Springfield.

January of the present year was the only month in which the registrations failed to equal those of 1924. In January, 1924, 6058 new cars were registered, as compared to 5,006 for January, 1925; February, 1924, had 4,335 registrations and February, 1925, 5,005; March, 1924, 6,772, and March, 1925, 6,858.

A. W. MORTON PROMOTED

BALTIMORE, April 25.—Allen W. Morton has been elected vice-president and chief engineer of the American Hammered Piston Ring Co.

Franklin March Shipments Show Big Increase Over 1924

SYRACUSE, N. Y., April 27.—A rapid gain in business of the Franklin Automobile Company since the introduction of the new style models, is indicated by the 41 per cent increase of March shipments this year over 1924.

Orders for April are 21 per cent in excess of normal capacity.

May orders, just closed at the Franklin factory, call for 35 per cent more cars than normal monthly capacity.

Franklin dealers' orders are accepted only one month ahead, in order to regulate production closely with retail sales. Total excess of monthly orders now held, added to unfilled orders on books absorb Franklin output practically to July 1.

SOVIET TO BUY CARS

WASHINGTON, April 25.—The automotive division here is informed that the Soviet government has decided to purchase automobiles to the sum of 8,500,000 gold roubles (\$4,374,100), the make selected depending upon the winner of the International Motor Trials over a course of 5,300 kilometers in length, scheduled toward the end of July this year.

WHITE SECURITIES MAKE PROFIT

CLEVELAND, April 25.—The White Motor Securities Corporation, which was organized a short time ago to finance purchases of White Trucks, made a net profit of \$73,936.67 during the first three months of the present year. The company started functioning on January 1 of this year and has established banking connections in over 30 of the 54 cities throughout the country where the White Co. has branch offices.

INDIANAPOLIS PUMP EXPANDS

INDIANAPOLIS, April 25.—An increased order of pumps is responsible for the shifting to Columbus, Ind., of the Arvin heater products branch of the Indianapolis Pump and Tube Company. Machinery has been installed and production is expected to begin within the near future

Rush Towards Buying Fords Augurs Well for New Plan

Dealers Enthusiastic Over Number of Applications—Real Value Not Yet Determined

DETROIT, April 25.—Following the establishment of the Ford plan for handling used cars on a radically new basis the announcement of the company's experiment with sales of new cars at a minimum down payment of \$12.40 has caused a sensation in the industry at large. Interest is now focused on whether the plan will be extended to other sections of the country, for makers of low-priced cars may experience a competitive reaction from the low payment terms set by the Ford company.

Extension Held Up

Consideration of extending the plan to other cities or to the country generally is held in abeyance largely because of inability to make deliveries on the scale that would be required.

Factory production previous to the announcement of the weekly payment plan was on a par with retail sales. With the plan in general effect the capacity of the plant would be far overtaxed and the company will not attempt to create business that it cannot meet.

As production facilities are increased the plan will probably be extended to several other cities—enough to take up the increased number of cars. These cities will be determined by the company according to the estimated effect on sales. It is likely that the weekly payment plan will be used by the company as a sales stimulant, when and where required, to keep retail business up to factory capacity.

Meets Big Reception

There is no mistaking the fact that the plan got off to a tremendous start. Applications for cars in the Detroit district reached about 4,000 during the first three days of the operation of the plan, and although later figures are withheld, there seems no doubt that both the company and the dealers are greatly pleased with the results to date.

The experiment is continuing, all the paper being handled by the Detroit Discount Corporation, under a special arrangement worked out between the Ford company and its Detroit dealer organization, the finance company passing on all applications and assuming responsibility for the completion of the deal.

Enlarges Field

Presentation of the plan is being made by dealers through a city-wide canvass. The terms and weekly payment as outlined represent minimum acceptable payments according to model, but higher payments may be made where convenient to the buyer. The addition of this plan gives dealer salesmen four buying plans to present in canvassing the non-owner field: all cash, one-third down and monthly payments, the new plan, and the savings plan.

Automobile Production

(U. S. Department of Commerce)

WASHINGTON, April 25.—The Department of Commerce announces March production of motor vehicles as 332,108 passenger cars and 45,012 trucks, of which 319,094 passenger cars and 42,923 trucks were made in the United States, and 13,014 passenger cars and 2,089 trucks were produced in Canada.

The table below is based on figures received from 175 manufacturers for recent months, 72 making passenger cars and 121 making trucks (18 making both passenger cars and trucks). March data for 11 small firms were not received in time for inclusion in this report. Figures on truck production also include fire apparatus, street sweepers and busses.

A comparison of the quarterly production figures for 1924 and 1925 shows that 196,472 more passenger cars were produced for last year than during the first three months of the present year. However, 7,424 more trucks have been built in 1925 than for 1924. January was the only month to fall behind in truck production, 2,624 more being made for the same month last year.

1924	Į.	1925	
Pass'ger Cars.	Trucks.	Pass'ger Cars.	Trucks
January 293,823	30,723	212,909	28,099
February .343,445	32,881	252,785	34,334
March357,006	36,417	332,108	45,012
April346,356	37,911		
May286,273	35,281	797,802	107,445
June225,034	29,041		
July244,504	26,368		
August255,194	28,614		
Sept'ber .263,468	31,942		
October 260,845	32,447		
November 204,316	27,893		
December 182,055	27,509		
Total 3,262,319	377,027		

Maxwell-Chrysler Output for March Is New Record

DETROIT, April 25.-The regular meeting of Maxwell Motor Corporation and Chrysler Motor Corporation stockholders has been postponed to May 12 to afford additional time for working out details of the plan to change the basis of the Maxwell-Chrysler stock. W. P. Chrysler, president and chairman of the board. drew attention of stockholders to the present outstanding position of the company. He said in part: "The total number of cars Maxwell and Chrysler sold during 1924 was 82,115. Production and shipments during the month of March were again the largest in the history of the corporation, shipments aggregating 7,633 Maxwells and 4,545 Chryslers.

"Inventories of Maxwell cars in the hands of dealers and distributors at the present time are approximately 42 per cent lower than last year. Retail sales in the United States are each week showing consistent increase. The reception accorded the Chrysler car in the export territories during the past several months has been extremely gratifying and your corporation is now actively engaged in an intensive survey and development of the export field which gives promise of absorbing a steady increasing proportion of our product.

"The number of sales agreements with distributors and dealers, representing the points of contact of the company with the motoring public in the United States at this time, exceeds by more than 30 per cent the aggregate of such agreement one year ago.

"To summarize, the year has accorded gratifying progress in the developments of the corporations' products, facilities, organization, financial position and market. The indications are all favorable to a continuing and further success in the operations of your corporation."

N. A. D. A. YEAR BOOK OUT

ST. LOUIS, April 25.—Much interesting and valuable information for the automotive dealer is found in "Championship Stuff," the 1925 year book of the National Automobile Dealers' Association, which now is in distribution. The book carries reprints of the principal addresses and discussions bearing on the subject of merchandising that were heard during the association's instructive convention in Chicago in January. Included are charts designed to help the dealer in measuring possibilities for selling his particular car in his community as well as other informative charts.

The demand for the book is said to be large and the issue is restricted so it is not expected that any of the members will go begging. Additional copies will be available to association members at \$1 each so long as the supply holds out.

Nash Production Increased by New Factory Building

KENOSHA, Wis., April 27.—With the completion of three new steel factory buildings, construction of which was begun on March 1, Nash production at the Kenosha plant will shortly show big increases. The production schedule until April 1 called for 225 cars per day. With the new buildings it is expected that the daily schedule will be raised to 325 cars.

Sales for the first half of the month of April are reported to exceed those of March for the same period.

Production of light six models at Milwaukee plant are now reaching 125 cars per day, present plant capacity.

L. F. MURPHY JOINS VELIE

MOLINE, April 27.—Announcement is made of the appointment of L. F. Murphy as assistant sales manager of the Velie Motors Corporation, located here.

Mr. Murphy will have his headquarters at the factory, where he will be actively associated with C. W. Hadden, general sales manager of the company.

Atlanta Accessory Sales for April Best This Year

ATLANTA, April 25.—Accessory, parts and equipment sales for the first half of April by Atlanta jobbers were the heaviest of any two weeks period this season. Retailers from all parts of the South have been active in buying and indications point, state the local jobbers, that April will prove by far the best month of the year to date.

Sales during March experienced a considerable increase following the dull period in February. The retail trade is showing no tendency to buy on a longer time basis, and dealers are taking what they may require for a four or five week period. Their total purchases are much larger than earlier in the year.

Reports from larger distributors of tractors and farm equipment is more encouraging than at any time for the past year. Tractor sales volume during March showed an increase of 20 per cent over the corresponding month last year. Managers of the factory branches in Atlanta say that this makes January to March one of the best early year periods in the history of the industry in the South. The outlook portends a continued improvement in sales on about this same basis for the rest of the spring.

Primary buyers of tractors have been the industrial enterprises, which show a 30 per cent increase over last year, while agricultural sales have improved over 1924 only about 10 per cent. Sales in February were 30 per cent better than in January and in March it is estimated at 20 to 25 per cent better than February.

L. P. FISHER CADILLAC HEAD

DETROIT, April 25.—Lawrence P. Fisher, vice president of General Motors Corp., has been elected president of the Cadillac Motor Co., succeeding Herbert H. Rice, who becomes assistant to Alfred P. Sloan, Jr., president of General Motors.

Massachusetts Car Owners Show Big Increase Over 1924

70,000 More Cars and Trucks Register in First Quarter of 1925 Than for Year Ago

BOSTON, April 25.—Some idea of the way Massachusetts people are investing in motor vehicles is shown by figures for the first quarter of 1925 in registrations, compared with the same period a year ago, and for March this year and last.

There were 399,226 motor cars and 73,804 commercial vehicles totaling 473,030 listed for the first three months. In 1924 the figures showed 336,171 cars and 67,068 trucks or 403,239 combined. This year shows a gain of 63,055 cars and 6,736 commercial vehicles, a combined total of 69,791. On a percentage basis this is 17.3 per cent gain. The gain for the entire year 1924 was 20 per cent, but at the present rate the total of a year ago will be passed before fall, when Massachusetts will have 800,000 vehicles on its highways, or 700,000 cars and 100,000 trucks.

The gain in March this year over 1924 is substantial, being about 35 per cent. March registered 42,578 cars and 3,958 trucks, totaling 46,536. This year the figures for the same month were 57,614 cars and 5,133 trucks. This is an increase of 15,036 passenger vehicles and 1,177 commercial, a total of 16,213. Here are the detailed figures:

Davis Car to Be Assembled In Canada Under Derby Name

SASKATOON, Sask., April 25.—The Derby Motor Cars, Ltd., expect to commence manufacturing operations here toward the end of the month. Twenty to 30 men will be employed with the payroll gradually being increased.

The company recently made a contract with the George W. Davis Motor Car Co., Richmond, Ind., which gives them the sole right to import the Davis car units, assemble and market it in Canada and abroad under the name "Derby." Their estimated output for the present year is from 250 to 300 cars. The company is capitalized at \$1,500,000 of which \$500,000 is preferred and \$1,000,000 common stock.

YOSEMITE PARK OPEN

SAN FRANCISCO, Cal., April 25.—Yosemite National Park is now opened to motorists, via the Wawona and Mariposa Big Tree roads, according to announcement by W. B. Lewis, superintendent of the park.

Sequoia National Park will be available to motorists May 15. There is paved road to within six miles of the park boundary and good gravel highway thereafter. The North Fork road, via Kaweah, 29 miles from the end of pavement to the Giant Forest, will open on that date.

INSURANCE RATE WAR ON

TORONTO, Ont., April 25.-Competition among insurance companies for automobile business has developed a rate war that has resulted in cutting of rates about 20 per cent. The cut has been made in theft, fire property damage and public liability. These classes of insurance cover the major portion of all risks. Competition has become so keen that several companies are seeking the business' of houses with fleets of vehicles at a reduced rate and allowing the employees of the firms to come in under the arrangements. Complaint has been made to the Ontario insurance department against this discrimination.

REO STOCKHOLDERS INCREASE

LANSING, Mich., April 25.—Reo Motor Car Co. states that in the last five years stockholders of the company have increased from 3,500 to 7,200, many employes of the company and local residents having purchased shares. The 33 1/3 per cent stock dividend recently declared will be distributed.

Traffic Congestion Causes Most Accidents in Far West

WASHINGTON, April 27.—Forty per cent of 1,606 accidents in the states of Montana, Oregon and Washington over an eight month period were caused by reckless or careless driving, the Bureau of Public Roads has announced here. Congestion of traffic was the principal cause of highway accidents in these states.

The bureau's study shows that Montana with the lowest registration has the smallest number of accidents per 1,000 cars, while Washington with the largest registration has the most accidents per 1.000 cars.

The total number of accidents are classified as follows: Faulty operation by driver, 1,020; faults of others than drivers, 191; faulty equipment, 181; faulty highway conditions, 214. Of the latter 19 were caused by narrow roadways and 150 by slippery surfaces.

CANADA-SPAIN TARIFF CUT

WASHINGTON, April 25.—Under a modus vivendi agreement between Canada and Spain, automobiles shipped to the latter country can be admitted for one-half the former tariff duty, according to cabled advices to the Tariff Section of the United States Department of Commerce.

OPEN CINCINNATI BRANCH

CINCINNATI, April 25.—The Western Auto Supply Co., of Kansas City, has opened up a large branch here, at 920 Race street. A. D. Burdick is branch manager and W. T. Garrett is sales A large stock of accessories and tires is carried, and special attention is devoted to a mail-order department.

Chevrolet Purchase Plan Sales Total \$6,000,000

More than 2,000 Certificates Sold Every Month—Money Deposited Insured Against Loss

DETROIT, April 27.—Cars and trucks aggregating \$6,000,000 have been sold under the Chevrolet Six Per Cent Purchase Certificate Plan since this copyrighted method was inaugurated among Chevrolet dealers seven months ago.

More than 2,000 of the certificates are sold each month.

Under its provisions a prospective car owner may start with an initial payment as low as \$5. If desired, a larger first payment may be made. This is followed by weekly or monthly installments suiting the convenience of the purchaser. These payments are then entered upon the back of the purchase certificate. When the sum of the payments plus the six per cent interest earned reaches one-third of the retail price the car is delivered. The balance may be met either outright or on a deferred payment plan.

Another attractive feature is a provision that a certificate holder who already owns a car gains a further credit toward his new automobile of 6 per cent of such amounts as he may spend with the dealer for service, repairs or accessories on his old machine.

The certificate savings are amply safeguarded. They are banked in a separate trustee's account in a local bank. Over 2,000 of these accounts are established in different banks in the United States. In addition all money paid in on a Chevrolet Purchase Certificate is insured against all loss by a strong and well known insurance company.

Bridge Across Golden Gate at San Francisco Is Possibility

SAN FRANCISCO, Cal., April 27.—The plan to construct an automobile and pedestrian bridge across the Golden Gate entrance to San Francisco harbor northward to Marin county was unanimously endorsed for the first time by the Board of Supervisors of San Francisco county and city at a regular meeting held recently.

This action, which in all probability makes certain the construction of the bridge and the linking up of all the highways of northern California with those of central and southern California is contingent upon an amendment to the Coombs act which provides for the creation of the Golden Gate Bridge and Highway District as a preliminary to actual construction of the bridge.

NEW STEWART BUS CHASSIS

BUFFALO, N. Y., April 25.—A six-cylinder bus chassis soon will be placed in production by the Stewart Motor Corp. of this city. It will be built in 198 and 220-in. wheelbase lengths, which will list at \$3,950 and \$4,150 respectively.

Oakland Official Optimistic About Sales for Entire Year

General Low Prices of Closed Cars to Wipe Out Seasonal Buying, W. R. Tracy Believes

PONTIAC, April 25.—Returning from a two months' trip through the agricultural districts of the west and middle west, W. R. Tracy, assistant director of sales of Oakland Motor Car Co., declares sales of automobiles will be as large in this district in the second half of the year as now. He bases this assertion largely upon the fact that this is the first year that the general low price of closed cars had an opportunity to wipe out the seasonal buying tendencies formerly existing.

The increase in good roads in the agricultural districts also will be of foremost importance in promoting the all-year sale of automobiles in these districts, Mr. Tracy said, because they make possible the all-year use of cars.

Business conditions are good throughout the farming districts, Mr. Tracy said, fruit and grain crop outlooks being especially favorable. Lumber and fishing industries in the northwest have not been good recently but are improving. Some conservatism in buying was forced on farmers in the grain-growing states through recent declines in prices, but the harvesting in midsummer of the new crops will bring them actively into the market, Mr. Tracy said.

Conditions through the year will not be of boom nature, Mr. Tracy said, but they will be steady and will show increases in buying.

OKEH COMPULSORY INSURANCE

CONCORD, N. H., April 25.—The New Hampshire supreme court has sent to the legislature an opinion that the proposed Burke bill requiring motor owners to carry compulsory insurance would be constitutional. The bill is now before the legislature waiting to be passed, and this decision may hasten its adoption. One section was in doubt, that being the clause whereby an owner of property could state that he was able to meet any damage claims and need not take out an insurance policy.

WOULD HANDLE AIR MAIL

NEW YORK, April 27.—Plans are under way whereby a group of New York and Detroit capitalists and aeroplane manufacturers would organize a company with a capitalization of \$2,000,000 to \$3,000,000 to take, over the operation of the New York-Chicago air mail service, it is learned here.

Preliminary steps were taken at a meeting in Detroit attended by William Stout, of the Stout Metal Airplane Co., in which Henry Ford is said to be interested; R. E. M. Cowdie, president of the American Railway Express Co.; Samuel Rea, president of the Pennsylvania Railroad, and E. V. Rickenbacker, automobile manufacturer, as well as others.

Advocates Minimum Speed Law

BALTIMORE, Md., April 25.—Abolition of the maximum speed limit and the substitution of a minimum speed law is being advocated by John N. Mackall, chairman of the Maryland State Roads Commission.

Congestion of traffic occurs chiefly on account of the slow-moving vehicles, in the opinion of Chairman Mackall. As a remedy to this situation he recommends that slow-moving vehicles not be allowed on certain highways during the peak hours of traffic.

MERL R. WOLFARD PRESIDENT

BOSTON, April 27.—Merl R. Wolfard was elected president of the New England section of the S. A. E. at its annual meeting recently. The other officers chosen were Professor Edward R. Warner, Massachusetts Institute of Technology, vice chairman, Lawrence Le Page, treasurer, O. E. Wheeler, secretary, Maurice Olley, chairman of the Springfield section, Professor E. H. Lockwood, chairman of the New Haven section.

Cadillac Deliveries Continue to Maintain Upward Trend

DETROIT, April 25. — Increasing business in the high class car field is ascribed to Lynn McNaughton, vice-president and general sales manager of Cadillac Motor Car Co., to a strengthening preference on the part of the motoring public for quality product. Every year more owners are realizing, he said, that choice of a car should be made on the basis of an investment for a period of years rather than on the basis of annual purchase.

Sales and deliveries of Cadillac cars have shown an upward trend throughout the early part of the year, the factory declares. Deliveries for the first week in April were larger than for any week since the first week of May, 1923. There is a constant strengthening of the market, the factory notes, with orders booked well in advance of production.

BREAK GROUND FOR PLANT

FLINT, April 25.—Ground was broken this week for the erection of the first unit of the new Flint Malleable Castings Co. plant, the building to be ready for operation in three months. The company will specialize in malleable castings for the automotive industry, the first unit having capacity for 9,000 tons yearly and employing approximately 200 men.

Plans are Completed for S. A. E. Welcoming Dinner

Hon. Albert J. Beveridge Is Added to List of Speakers—600 Expected to Be in Attendance

INDIANAPOLIS, April 25.—Final plans have been completed for the Silver Anniversary and welcoming dinner to visiting S. A. E. men and automotive leaders, who will be in Indianapolis the night before the 500 Mile Race, by the dinner committees of the Indiana section, S. A. E., which is sponsoring the event, and the Indianapolis Chamber of Commerce, which is collaborating.

Prominent Speakers

Hon. Albert J. Beveridge will speak on the "Civic and Economic Revolution Brought About by the Automotive Industry." Others who will make addresses are Maj. Gen. Masom M. Patrick, C. F. Kettering and Charles E. Schwab.

George T. Briggs, chairman of the Indiana section, is general chairman for the dinner and with him the Indiana section is represented by Frederick E. Moskovics and Col. William G. Wall. The Indianapolis Chamber of Commerce committee is headed by C. M. Williams, president of Nordyke & Marmon Company, and Col. John B. Reynolds, secretary of the Chamber of Commerce.

To Seat 600.

Advance orders for more than half of the available reservation have been received, and out of town S. A. E. men and automotive leaders who expect to attend the dinner are asked to notify George T. Briggs, care of Wheeler-Schebler Company, Indianapolis. Formal announcements to other S. A. E. sections and to automotive leaders will go out shortly. The tickets are \$3.50 each, and the maximum number of guests who can be entertained is about 600 The event is timed for 7 P. M. sharp, May 29, at the Indianapolis Athletic Club.

VEHICLE TRAILERS NOT TAXABLE

WASHINGTON, April 27.—Vehicle trailers are not taxable under the federal law pertaining to automobiles and parts, according to a decision of the court of claims made public recently by Attorney General Sargent. The Bureau of Internal Revenue had taxed two and four-wheel trailers, usually used behind automobiles. An action was instituted against the government by a company manufacturing this product, the decision being a reverse to the government.

NAMED EXPORT DISTRIBUTOR

CLEVELAND, O., April 25.—Col. Fred Cardway was recently named export distributor for the Rollin Motor Car Co. Overseas distribution of the tractors made by this company will continue under the direction of Ed Sewell. Col. Cardway has for some years been connected with foreign merchandising of American cars, particularly the Peerless and Pierce-Arrow.

Traffic Accidents Cost U. S. Over Billion Dollars in 1924

23,600 Persons Killed and 700,000 Injured—\$1,000,000 Estimated to Be Loss in Wages

WASHINGTON, April 25.—Traffic accidents in 1924 cost the United States more than \$1,000,000,000. Automobiles figured in 23,600 deaths and injuries to 700,000 persons.

These figures have just been made public here in connection with announcement that forces of the nation will be mobilized in the coming summer in a far-reaching campaign to secure street and highway safety.

To Draft Plans

Secretary of Commerce Hoover has started preparations for the National Safety Council in December, when about 1,000 delegates will gather from all states to draft new plans to meet what is regarded as one of the big economic problems of the day.

Last year's losses are summarized as follows:

Property damage from \$700,000,000 to \$1,000,000,000.

Life loss, 23,600, including 10,000 children.

Permanently injured, over 700,000.

Officials estimate that nearly \$100,000,000,000 was lost in wages last year as the result of deaths and injury due to traffic accidents.

TO DISCUSS TRAFFIC RULES

WASHINGTON, D. C., April 25.—Traffic regulation in the metropolitan cities, motor carriers in inter-state commerce and other phases of the regulation of motor carriers will be discussed by the transportation and communication group of the United States Chamber of Commerce at the Chamber's thirteenth annual meeting to be held here May 20 to 23.

Toledo Automobile Plants Employ More Than in 1924

TOLEDO, April 25.—Employment in Toledo automotive plants has reached its highest point in the last two years and indications are that some of the plants may put on night shifts.

The fifty-one plants taking a weekly employment census showed at last reports 28,213 workers employed as compared with 25,090 at the same time a year ago.

The Chevrolet Ohio Motors Co. is boom ing its production and Willys-Overland has been adding men each week.

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MOTOR CLUB IS ORGANIZED

SHEBOYGAN, Wis., April 27.—A campaign is now going on here for the organization of a Sheboygan motor club, and with the first call for memberships 200 motorists were signed up. The club is affiliating with the Wisconsin Motorists' Association.

MADE DISTRICT MANAGER

ATLANTA, April 25.—G. V. H. Cairns has been appointed Atlanta district manager for Oakland Motor Car Co. succeeding A. G. Millard, resigned. Mr. Cairns has had seventeen years' experience in sales executive positions in the automotive industry, starting in 1908 as technical field representative for the Hudson Motor Car Co. He was later assistant to the sales manager at Paige Detroit Motor Car Co. and was assistant to the president of Krit Motor Car Co. for two years,

In 1914 he became western sales manager of Saxon Motor Car Co. and held this position to 1917 when he entered the ordinance tractor division of government service. He joined Oakland in 1919 in the factory sales department and was assigned later to open a New York branch. He served as assistant manager of this branch until this present promotion.

Legislature May Dominate California Road Commission

SAN FRANCISCO, Cal., April 27.—Automobile dealers, operators of motor-truck and auto-stage lines are interested in a compromise just reached after weeks of bickering between the State Legislature and the State Highway Commission, by which it appears certain that the highway commission will be brought directly under the control of the legislature

This domination of the state board by the legislature has been opposed by the automotive industry and motorists generally, because it is feared that it will inject politics into the business of building and maintaining the highways, while the independence of the highway commission from political influences has made for better highways and more equable distribution of construction.

Highway financing by the legislature has been held up for some weeks by the refusal of the commission to present a budget to the legislature for approval. Under the compromise this is expected to be done away with.

PREPARE FOR TOURISTS

SAN FRANCISCO, April 25.—The Call of the Open Road will soon be heard again throughout Northern California and the attention of the public will be directed to the fact that the roads into the mountain fastnesses of the state are being opened to summer travel, that the hills are green with spring verdure and that the time to tour is at hand.

Vacation time is near, and a mighty effort will be made to warn the public to prepare in advance for the summer touring necessities.

The week of May 4 has been officially designated as Open Road week by the San Francisco Motor Car Dealers' Association and a committee of motor car executives is already busily engaged with plans for an open road tour, special Van Ness Avenue showroom decorations during the flesta and interesting musical programs during the evenings of the celebration

Ford Production in England Over Quarter Million Mark

Is Said to Be Record for Industry in British Isles—Materials Are 90 Per Cent English

DETROIT, April 25.—The quarter million mark was reached in Ford production in England recently when car number 250,000 left the final assembly line, in the plant at Manchester, according to a cablegram received by Edsel B. Ford from the English company.

This is a production record for the automobile industry in England and is significant also from the fact that cars manufactured in Manchester are absorbed in the British Isles.

All Ford cars made in England are built of approximately 90 per cent British materials. Further, the policy of the English company requires that British labor only be employed. And in accordance with this policy those parts not made in the Manchester plant are fabricated by other English industrial manufacturers. All cylinder blocks and many other parts are cast and machined in the plant at Cork, Ireland, which operates under the name of Henry Ford & Son, Ltd.

SALVAGE PLANT FOR BUICK

FLINT, April 25.—Buick Motor Co. will erect a model salvage plant costing approximately \$50,000 to take care of all lumber remnants, metal scrap, waste paper and left-overs generally. The plant will at first give employment to 50 or 60 men and it is the plan of the company to place older employes in this unit who are unable to continue the strain of employment in the regular manufacturing departments.

Automotive Trades Increase Orders of Atlanta Lumber

ATLANTA, April 27.—For the first time in several weeks, the larger manufacturers in the Atlanta lumber market report an increase in their sales of white ash, maple and elm in the thicker dimensions to the automotive trades for the week of April 6.

Sales so far this year have fallen below the level for the corresponding period of 1924 due to the lack of active demand noted during February and most of March.

Improvement in inquiries has been reported the past three weeks, indicating a pick up in this business during April, which is expected to prove the best month. Prices are being maintained for all thicker dimensions with the market much firmer than for some time.

JOHN S. NOLAND DEAD

KOKOMO, Ind., April 25.—John S. Noland, manager of the Apperson Automobile Company's service department for the last eighteen years, died at the Good Samaritan hospital here recently following a long illness.



Along Automobile Row



BIRMINGHAM, Ala.—The Bissell Motor Company, distributors for Reo in Birm-ingham, have recently announced the ad-dition of the Marmon to their lines.

PORTLAND.—Clifton R. Shaw, of Augusta and Portland, distributor for Willys Knight and Overland lines in Maine, has just opened another branch, this time at Lewiston to serve that city and Auburn. T. Y. Springer has been placed in charge.

DALLAS, Tex.—The Worsham Buick Company of Dallas, Tex. has opened a new salesroom for used cars. The reconditioned cars will be displayed just like new cars. The slogan of the new department is "No Apologies," which means that everything which should be done has been done before the car was placed in the salesroom for disposition.

KOKOMO, Ind.—The Auto Inn, the largest and most modern garage in Kokomo, has been purchased by the Kokomo Nash Co., Nash dealers here, from Tom Jay. Work is to be started at once on the remodeling of the entire front of the building, which is to be made into a salesroom.

CHARLOTTE, N. C.—Waddill Motor Company of Mathews, with authorized capital of \$50,000 and \$12,000 subscribed by C. K. Waddill and Fannie D. Waddill, both of Cheraw, S. C., and H. C. Dockery, Charlotte, has received a charter.

ROCHESTER, N. Y.—Julian A. Bakrow, well known Rochester business man, has taken an active partnership in the East Avenue Tire Company, of Rochester, N. Y. The company operates three tire shops in the city carrying all the standard makes. Mr. Bakrow resigned the presidency of the Rotholz Examining and Shrinking Company to enter the tire field.

COLUMBUS, O.—W. L. and P. L. Duncan, operating as Duncan Brothers will open a wholesale business at 119 East Gay street, Columbus, for the sale of automobile parts, equipment and accessories. The firm has been operating a similar business in Nelsonville for three years.

CLEVELAND.—Smith-Lowder Co., is the name of a new retail auto accessory company recently chartered with a capital of \$25,000. Incorporators are W. J. Smith, H. T. Lowder, A. R. Edgerton, R. E. Davis and C. L. Gates.

LOS ANGELES.—Mack - International Motor Truck Corp., expects shortly to occupy a new building in Los Angeles as a coast distributing point. The new structure covers three and a half acres of ground and will have operative floor space in excess of five acres.

AURORA, Ill.—Thurnau & Krunfess, implement and auto dealers in Bartlett, Ill. have started erection of a large concrete and brick garage to be devoted to their rapidly growing motor trade.

ST. CHARLES, Mo.—The Ringe Motor Company, Louis Ringe, proprietor, has been sold to Jos. Botani and Theodore Pundmann. The consideration is between 45,000 and \$50,000 and includes the garage building on Second street at the corner of Jefferson street.

LITTLE ROCK, Ark.—An agreement has been made by L. E. Whitmore with the Newsum Auto Tire and Vulcanizing Company to erect a modern two-story building for the tire company on property owned by Mr. Whitmore at the northwest corner of West Capitol avenue and Arch street, it has been announced.

CINCINNATI.—It has been announced by the Fuller Automobile Company, dis-tributor of the Hupmobile, 113 East Sev-enth street that May 4 it will move to 2023-24 Reading Road where it will have 130 feet frontage.

ATLANTA.—The Corliss Compression Inner Tube Co. has purchased a 20-year lease on the extensive factory properties in Atlanta of the Doss Rubber & Tube Co.

KOKOMO, Ind.—Chester Thorne, former Texas representative for the Turner Manufacturing Co. of this city, has joined the factory organization as secretary.

KANSAS CITY, Mo.—The Hemphill Motor Company, Twenty-fourth street and Grand avenue, has been appointed distributors for Marmon automobiles for Kansas City and tributary territory.

ROCHESTER, N. Y.—The Sergeant Motor Company, Oakland distributors, have purchased a two story building containing about 20,000 square feet of floor space to house their used car department.

MINNEAPOLIS.—The Pennsylvania Rub-ber Co., Jeanette, Pa., has leased for Northwestern headquarters a four story building at 100 Third avenue N. Minne-

RACINE Wis.—A new home for the Lincoln automobile agency here became a reality with the purchase by the Rohan Motor Company of this city of the Gorton block on "Automobile Row."

DECATUR III.—The Cadillac company of Decatur, Inc., 418-422 East William street, has been bought by William and Glenn W. Freds and J. L. Tallman, Chevdealers.

ST. LOUIS, Mo.—William S. Speer, well known automobile man here, has been appointed general manager of the J. M. Lederer Co., Willys Knight and Overland

BUFFALO.—The Hertzog Motor Company, Inc., Buffalo has been appointed as distributor for the complete Gardner line of Sixes and Eights.

SAN FRANCISCO.—The Willie Ritchie Tire Company, on Van Ness avenue, has been appointed distributor in this territory for Kelly-Springfield pneumatic and bal-

TORONTO, Ont.—Alemite Products Co. of Canada, Ltd., Belleville, have appointed Donald F. Johnston. who now represents Stewart Warner products in Toronto, their distributor in that territory.

MONMOUTH, III.—Twelve garages and service stations for batteries in this city have signed an agreement to make a service charge of 25 cents for work performed upon any battery.

BALTIMORE.—The Acme Auto Radiator Manufacturing Co., 700 McCulloch street, Baltimore, has been incorporated with \$50,000 capital stock to deal in automobile radiators and parts.

INDIANAPOLIS.—The Rollin and Rick-enbacker distributor companies of this city and territory were united last week by the merger of the Terstegge-Hollowell Company, Rollin distributor and the J. G. Wilmoth Company, Rickenbacker dis-tributor.

COLUMBUS, O.—The Columbus Automobile club, in addition to having a number of service stations located in various sections of the city to furnish first aid service to members, has recently leased a completely equipped repair shop in the business section of Columbus.

SEATTLE.—Lee Kearns formerly associated with the Moon line here, has been appointed retail sales manager for the Willys-Overland Pacific Co., of this city.

CHARLOTTE. N. C.—Hood Rubber Co. has established a Carolina distributing branch here. L. M. Everett is manager and L. M. Lippitt is office manager.

HOUSTON.—The Terbaco Battery and Electrical Service Company is the newest firm on the Houston automobile row. O. B. Sterling is sole owner of the new business. He is specializing in auto and radio batteries, electrical equipment for automobiles, Ajax tires and tire accessories.

BRECKENRIDGE, Tex.—The Robbins-Mason company of Breckenridge, Texas, has let a contract for the erection of a garage which will cost \$35,000. The plant will be equipped with washing rooms, greasing racks and storage and parking spaces and will house one of the best re-pair shops in West Texas.

WATERLOO, Ia.—A. R. Cash, formerly of Clinton, Iowa, has purchased the Blackhawk Buick Company, West Fourth street, and is now Buick agent in this

SPOKANE, Wash.—Maurice Sweeney proprietor of the Sweeney Battery Shop here, has taken S. Torkelson as a partner, The business has increased substantially and another pit was recently added to accomodate cars.

SPRINGFIELD, O.—Contract for the construction of a large building in North Fountain avenue for the W. A. Kelley-Ford agency has been let, and will be fireproof.

CLEVELAND, O.—The Euclid-Ninetieth Auto Wash Co., Inc., has been chartered to engage in the auto washing and re-pairing business. Incorporators are Abra-ham Grodis, Morris Spesser. David Rontal, H. H. David and C. Leopold.

HARTFORD, Conn.—The firm of Arthur E. Center, Inc., Hartford, Conn., has been formed to handle the Jordan in the Hartford territory. Joseph Branchere of the sales force of the McFarlan-Jordan Co., the former representative, has joined the sales force of the new organization.

SPRINGFIELD, Mass.—The Smith Carriage Co. has taken over the operation of the Park Street garage and is adding a line of small accessories to the storage business. V. D. Ten Broeck is manager.

ST. LOUIS—Lyman C. Refferty has been authorized as a Marmon dealer in St. Louis by Gore Automobile Co., distributor in that city, and has opened a sales and service station. Joseph Lachler is in charge of the service department.

ST. PAUL—Manthe, Miller and McGill is a new organization formed to sell and service the Case car in St. Paul and im-mediate vicinity. H. H. McGill is man-

NEW YORK—Picard-Ryan, Inc., has been organized in New York to succeed A. J. Picard and Co. A. J. Picard will be president of the new company and Fred Ryan will be secretary and treasurer. Gabriel Snubbers, Pur-O-Laters and Winterfront will be handled.

PITTSBURGH.—Northside Nash Corp. has been organized in Pittsburgh to handle the Nash car. C. H. Eisenbeis is president, P. W. Dutton vice president and service manager, and H. O. Eisenbeis sections.

WELCH, W. VA.—Ashworth Motor Sales Co., Ford dealer in Welch, W. Va., has completed the construction of a new building that has a floor space of 10,000 feet L. L. and J. B. Ashworth are the owners

WICHITA FALLS, Tex., April 14.—W. F. Hogan, salesman for a motor car company, was fatally injured Monday afternoon in a collision here between a touring car in which he was riding and a touring cardriven by J. R. Myers.

OKLAHOMA CITY.—Oklahoma City took another step north on Broadway Tuesday when it became known that the northwest corner of Tenth and Broadway has been purchased by S. A. Layton and A. O. Campbell, architects, for the purpose of building a new Buick Motor company salesroom.

PORTLAND, Ore.—The James H. Graham Motor Car Co. is now permanently located in its new home at the corner of Nineteenth and Morrison streets in the new Multnomah block.

HOT SPRINGS. Ark.—Hot Springs is to have an automobile manufacturing plant, it was learned when the Ben Hur Motor Co. asked for a charter yesterday. The company is capitalized at \$200,000.

ATLANTA—H. H. Alexander, manager of the Atlanta branch of the Buick Motor Co.. announces the appointment of M. T. Gilbert as general sales manager for the branch. This post is one recently created. Mr. Gilbert has been identified with the branch for some years as a traveling salesman.

With the Associations

Carolinas to Assist State Bureau

GREENSBORO, N. C., April 27.—The automotive trade industry, as a result of conferences here of officers and directors of the Carolinas Automotive Trade Association, is prepared to meet the new policies of the state government, based on recently enacted state laws. Co-operation with the state automobile licensing bureau will be closer hereafter, while the new law requiring registration of motor truck titles is endorsed by the automotive

The title registration law and the state's machinery for hunting stolen cars has resulted in all but about three per cent of the stolen cars being recovered in this state in recent years. The number of thefts is steadily decreasing, due, according to officials, to the increasing fear of imprisonment on the part of would-be automobile thieves.

Credit Association Organized

ABERDEEN, Wash., April 25.—The automobile dealers of Grays Harbor County (Wash.) have organized a credit association for joint clearance of automobile accounts and credits, and also for gathering information of value in this connection. The new body is known as the Washington Automotive Credit Association

W. J. Judd Heads Detroit Group

DETROIT, April 27.—New officers of the Detroit Automobile Dealers' Association were elected recently, Walter J. Judd, president since the retirement of A. L. McCormick, being reelected to this post. Mr. Judd outlined organization policies for the coming year which met with unanimous approval. The other officers are L. H. Saunders, vice president; John W. Neumann, treasurer, and R. B. Mann, secretary.

Walter J. Bemb was reelected a director of the association, and W. D. Edenburn was named assistant manager. H. H. Shuart continues as manager.

Chicago Man Principal Speaker

PEORIA, Ill., April 25.—H. J. Fogelman of Chicago was the principal speaker before the Peoria Automobile Dealers and Accessory Association at the Peoria Automobile club recently. He spoke upon the subject, "The Science of Business Building." All those engaged in the automotive industry in Peoria and neighboring points were invited to attend and the speaker was greeted by a large and appreciative audience.

Philadelphia Honors Block

PHILADELPHIA, April 25.—The Philadelphia Automobile Trade Association at luncheon in association headquarters presented to Louis C. Block, retiring president of the organization, a hand-some gold watch as an expression of

appreciation. It was Block's birthday and J. G. Roberts, a member of the board of directors, made the presentation. The watch is one of 500, made up by the manufacturers in commemoration of their fifty years in business, and is the duplicate of one presented to General Pershing by his staff. Block will now, among his other business interests, devote more of his time to the Gabriel Sales and Service Co.,

Cleveland Shows Salesmanship

CLEVELAND, April 27.—A corps of Cleveland's leading automobile dealers sold 25 memberships in the National Automobile Dealers' Association in ten minutes during one noon hour here recently.

The exhibition of salesmanship was staged here when 300 dealers assembled in the Winton Hotel under auspices of the Cleveland Automobile Manufacturers' and Dealers' Association to learn the terms of the merger of the Ohio Automotive Trade Association with the National Automobile Dealers' Association.

Seattle Host to Freight Men

SEATTLE, April 25.—Truck dealers from all parts of the State of Washington recently convened at Seattle to attend the annual two-day meeting of the Western Motor Freight association. Although the organization represents the motor freight industry on the west side, plans are being completed for organizing eastern Washingon.

Texas Outlook Promising

DALLAS, Tex., April 25.—The board of governors of the Automotive Equipment Association met here recently with Texas automobile equipment dealers and discussed the business situation in the southwest. The board of governors is making its annual tour of that section of the country to ascertain in what way the national organization can assist in promoting business and gathering data for the national convention.

It was the consensus of opinion among members of the board that business is good in the southwest for spring equipment trade. Dealers in all sections are meeting distribution problems and adjusting themselves to the changing conditions.

Baltimore Goes in For Golf

BALTIMORE, April 25.—The Baltimore Automobile Trade Association, Inc., will be in the intercity dealers' golf championship league this year, joining with New York, Brooklyn, Newark, Philadelphia, Pittsburgh and Washington. The tournament will begin in May. The Golf Committee of the Baltimore association is composed of A. J. Hunter, E. T. Backus and Dan S. Neill.

A. B. B. A. Program Announced

NEW YORK, April 25.—Plans and topics for talks and discussions have been announced for the fifth annual convention of the American Body Builders Association which will be held in Detroit June 1 to 4.

It is the intention of officers of the association to devote considerable time at the convention to a consideration of Federal taxes and reduced taxes on bodies. Another important subject will be preparation of plans leading to a plea for revision of freight rates. Among other topics considered are: "Trends in Body Models," "Bus Nomenclature," "The Requirements for a Practical Bus Finish" and "A Practical Enduring High Lustre Lacquer Luster."

The success of the 1924 exhibition and meetings and the activity expected at the coming convention have necessitated more room than formerly, so the ball room and connecting assembly hall of the Statler Hotel have been secured for the displays and assemblies.

N. C. Will Hear G. J. Burger

CHARLOTTE, N. C., April 25.—George J. Burger of New York City, president of the National Tire Dealers association, has been selected as the speaker of the first state convention of the North Carolina Tire Dealers association to be held here May 12 at Hotel Charlotte, it was announced at the weekly meeting of the Automotive Service association yesterday, when it was made known that the state convention will be held there.

Mr. Burger is known throughout the United States among tire dealers and has served for three years as president of the national association.

The Charlotte Automotive Service association, which is affiliated with both the state and national tire dealers' associations, will be hosts at the convention and will be in charge of all arrangements for the program.

Ohio Passes Gas Tax

COLUMBUS, O., April 25.—The Ohio Legislature, reconvening after a 10-days' recess, passed over the veto of Governor Donahey the bill imposing a two cent per gallon tax on all gasoline sold in the state. The bill, which was fostered by Representative Brown, had a stormy career in both houses of the legislature, as it was vigorously opposed by the Ohio Automobile Association, which is composed of about 90 motor clubs of the Buckeye State.

Governor Donahey vetoed the measure but it was passed over his veto by a vote of 98 to 20 in the House of Representatives and by a similar heavy vote in the Senate. A long legal battle over referendum proceedings and constitutionality is forecast.

Development of Man Power Industry's Greatest Need

Special Emphasis Should Be Placed On Sales Is Opinion of W. B. Burrus of N. A. D. A.

TOLEDO, April 25.—Development of man power in the sales end of the automotive industry is the greatest need today in the opinion of William B. Burrus, sales consultant of the National Automobile Dealers' Association, who addressed a recent meeting of Toledo Automotive Trades Association members and other Northwestern Ohio dealers and local business men.

Get 30 Members

The result of the visit of the national experts to Toledo was the securing of more than 30 new members of the N. A. D. A. and the starting of a local council in the new plan of Ohio state organization now being worked out.

Charles Doan, former state president, explained the new organization plan in which each state member will become attached to the N. A. D. A. and the state will operate as a council under that body.

"The business man of today must make a profit if he is to be a good citizen and take part in the things that the community expects him to," declared Mr. Burrus in his talk.

Offer More for Dollar

"The automotive industry today is so well organized from a production standpoint that it can offer \$1.14 of 1914 value for a present day dollar—something that cannot be done in any other line of industry.

"But the dealer end is in a deplorable state because the public has helped to force dealers into rebating practices through the trade-in of used cars at excessive valuations. Rebating has been eliminated by law from many other industries. Used cars must be bought so they can be sold at a profit or an injury is done to business and the community and all suffer eventually. Public opinion and honesty must stop rebating."

TIRE-RIM ASSOCIATION ELECTS

CLEVELAND, April 25.—J. D. Anderson was elected president of the Tire and Rim Association at the recent annual meeting held in this city. Other officers of the association are W. B. Minch, vice-president, H. F. Kranz, treasurer, C. E. Bennett, secretary and general manager, H. W. Day, assistant secretary.

CHICAGO MANAGER NAMED

DETROIT, April 27.—Hugh Higginbottom has been appointed Chicago district manager for Oakland Motor Car Co., succeeding L. J. Brocking, resigned. C. W. Matheson, vice-president in charge of sales of Oakland, has named Edson H. Smith as district manager at Kansas City succeeding A. P. Tenbrook, resigned. Mr.

Coming Motor Events

Automobile Shows

- Second Annual Automobile Maintenance Equipment Show, General Motors Bldg. Conducted by National Automobile Chamber of Commerce with co-operation of Motor and Accessory Manufacturers' Assn., National Automobile Dealers' Assn., Society of Automotive Engineers, Automotive Equipment Assn., Automotive Equipment Assn., and Automotive Manufacturers' Assn. Sam Miles, Manager.
- Syracuse, N. Y.......June 3-13
 First Summer Automobile Show in
 connection with Centennial expos-

Races

Charlotte, N. C	May	11
Fresno, Cal	April	30
Indianapolis, Ind	May	30
Los Angeles, Cal	May 22	-23
Los Angeles Economy I	Run-from	
Los Angeles to Camp	Curry in	
Yosemite Valley.		

Conventions

- Cedar Point, O.....June 19-20
 Annual Convention Ohio State
 Auto Association.
- Cleveland, O.......May 15-16
 Fourteenth Annual Meeting National Hardware Association.
- Tuscaloosa, Ala......July 20-21

 Midsummer meeting of the Alabama Automotive Trades Associa-

Foreign Shows

- Budapest, Hungary......May 23-June 3
 Royal Hungarian Automobile Club
 International Exposition for automobiles, motorcycles, motorboats
 and all connected industries.
- Melbourne, Australia.......April 22—May 7
 International Automobile Show,
 Chamber of Automotive Industries
 and Royal Automobile Club of
 Victoria.

Higginbottom recently joined Oakland as traveling supervisor attached to the office of director of districts. Formerly he was a member of the Dodge Brothers sales organization for 14 years. His territory as Chicago manager includes Northern Illinois, Eastern Iowa and Southern Wisconsin. Mr. Smith joins Oakland from Dodge Brothers, with whom he had been connected for nearly 11 years. His territory for Oakland will include Kansas, Western Missouri and part of Oklahoma.

NEW DISTRIBUTION HOME

MINNEAPOLIS, April 27.—Northwestern headquarters for distribution of Chevrolet cars will be moved July 1 to Seventh Avenue N and Third street, when a building to cost \$100,000 will be ready for occupancy. The structure is to be 2 stories, 87x149 feet, to trackage of the Great Northern and Burlington roads.

The building will house general offices, dealers' display room, parts and warehouse departments. Louis B. Barnes is Northwestern manager, his territory being Minnesota, the Dakotas, Montana, Northern Iowa and western Wisconsin. The branch is now at 527 Fourth Street S.

WORKING OVERTIME

FOSTORIA, O., April 27.—The Electric Auto Lite Company is giving employment to 600, including a small night force, and all are working overtime.

BUILDING STORAGE PLANT

TOLEDO, April 25.—The Mountain Varnish & Color Works, Inc., has started work on an addition to the plant for the storage of cellulose used in the manufacture of Movolac, the new lacquer enamel automobile finish which has recently gained popularity.

President W. W. Mountain announced that the company will have a capacity for 1,500 gallons a day.

The plant here now employs 160 men and last year had a total output of more than \$2,500,000 of varnishes and paints practically all of which went into the automotive industry and railroads.

NOW CHANNON PRODUCTS CORP.

CHICAGO, April 25.—The name of the Channon Hughson Co., 223-233 W. Erie street, Chicago, has been changed to Channon Products Corporation. The only change in personnel is in the withdrawal of Mr. Hughson, who has been succeeded in the office of vice president by Frederic B. Hart, who will also serve as manager of sales and be in charge of advertising. The company makes heaters, shock absorbers and other automotive products.

NAMED TRAFFIC DIRECTOR

WASHINGTON, April 27.—M. O. Eldridge, research specialist of the American Automobile Association, has been appointed director of traffic of this city by the district commissioners.

N. A. F. C. Directors Rule Against Giving of Rebates

Recommend 33 1/3 Per Cent as Minimum Down Payment With Balance in Twelve Months.

CHICAGO, April 25.—At a special meeting called April 17 to act on the report of a committee which had reported on the endorsement or non-endorsement of used car paper, and to consider the giving of rebates and to interpret the resolutions adopted by the Association at its December meeting, the board of directors of the National Association of Finance Companies adopted the following resolution:

ing resolution:

Whereas, it is the opinion of the directors of the National Association of Finance Companies that resolutions a, b and setting forth certain credit terms, c, setting forth certain credit terms, adopted at a general meeting of finance companies at Chicago, Dec. 10 and 11, 1924, are fundamentally sound, and should be observed by finance companies and au-

tomobile dealers,
And whereas, a number of finance companies and automobile dealers, apparently with the knowledge of some of their respective bankers, have not been observing said resolutions in the recent conduct of their business, but have continued to accept motor retail time sales transactions covering the sales of new passenger cars where the minimum down payment has been less than 33 1/3 per cent of the cash or 30 per cent of the time selling price, and in many cases where there have been more than 12 equal monthly payments, or where the twelfth monthly installment has been larger than the previous installments, with an agreement, implied or otherwise, to renew such installments for a longer

period,
And whereas this Association cannot legally require compliance by its members with the aforesaid resolutions a, b and c, Now therefore be it resolved. That the

status of any member of this Association is not affected by reason of its failure to conduct its business on the basis set forth in the aforesaid resolutions a, b and c, nor shall such action by such members be continued as a repudiation of the soundness of the fundamental principles embodied in said resolutions,

And be it further resolved, That in view of the tremendous stabilizing effects for of the tremendous stabilizing effects for good which has already resulted from a rather general adherence by a large number of finance companies and automobile dealers to the aforesaid resolutions a, b and c, very definite steps be taken to increase the membership of this Association, through an active, educational program to have finance companies and automobile dealers generally see the soundness and dealers generally see the soundness and wisdom of supporting the fundamental principles set forth in the aforesaid resolutions a, b c.

Also be it further resolved. That a copy Also be it further resolved, That a copy of these resolutions be mailed to all finance companies throughout the United States, with the request that they promptly join the Association in its activities for the general good of the automobile financing business.

Whereas, the report of a special committee of this Association reflects the majority opinion of representative finance companies throughout the United States that endorsement or repurchase agreement

that endorsement or repurchase agreement by the dealer should be required in connection with used car paper purchased by

nection with used car paper purchased by finance companies.

Now therefore be it resolved, That the directors of the National Association of Finance Companies recommend that all finance companies and local associations support this practice, and put it into effect wherever practicable.

Whereas, the practice of some finance



Along the Row



Guard (showing visitor through violent ward in other institution): "These are sad cases, sir. These poor fellows in here all think they're automobile mechanics."

Visitor: "I don't see anybody in here. Where are they?'

Guard: "Under the bed working on the springs."-Oklahoma Whirlwind.

Tech-nique

Goin' our way? Yeh? Jump in. Like our way? Yeh? Move closer. Act our way? No? Jump out!-Pitt Panther.

Never Met Any

"Is she a good driver?"

"Yep; she just drives me crazy.-Oregon Ag. Orange Owl.

I'll Tell One

Salesman: "This car has a wonderful pick-up."

Dignified Banker: "Neither my family nor myself are interested in that sort of thing."-California Pelican.

Might Have Known

The drive-it-yourself auto man was highly elated; all twenty cars had been out since 9 o'clock and it was 2:30. Presently the first car rolled in.

Soon they had all come in and the proprietor faced starvation. None of the cars had gone more than two miles-all had been rented by college men.-Johns Hopkins Black & Blue Jay.

Getting Wild



She (five minutes after being introduced): "Do you own a car?"

He: "Surely, why ask?"
She: "Well, I was just wondering if you were ever pinched for speeding."-N. Y. U. Medley.

companies of giving automobile dealers rebates in one form or another is unfair competition, and a fraud upon the public, which may lead to generally discrediting

the automobile time sales business, Now therefore be it resolved, By the board of directors of this association, that the practice of giving and receiving re-bates be unreservedly condemned, and that finance companies and automobile dealers be urged to give retail buyers of automobiles the benefit of any economies that can be effected in financing time

Explaining the resolution which calls for the 33 1/3 per cent of the cash or the 30 per cent of the time selling price with the remainder to be paid in 12 equal monthly installments, Charles C. Hanch, secretary and general manager of the Association, said that it was not adopted with any reference to the plan now being tried out in Detroit by Ford dealers. The association plan pertains only to paper which has the car as the security.

Pick-up Body Added by Ford for Commercial Purposes DETROIT, April 25 .- Ford Motor Co.

has added a pick-up body to its commercial line priced at \$25 which is designed through attachment to the roadster model to meet requirements for hauling equipment lighter than the ton truck. The new body is demountable with the rear deck on the roadster, making alternate use of each possible.

The pick-up body is all steel construction. It is three feet, four and threequarter inches wide and four feet, eight inches long. Sides are thirteen inches deep to the flare, affording loading space ample for light delivery purposes. end gate is fastened by chains either closed or open. The bodies are made by the company and will be sold through all dealers.

General Gasoline Reduction Made in Illinois and Indiana

CHICAGO, April 25 .- A general reduction of one cent a gallon in the price of gasoline has been made by the Standard Oil Company of Indiana and the Roxana Petroleum Company.

The reduction by Standard applies to the states of Illinois and Indiana, and the reduction by Roxana to Chicago and its immediate suburbs.

GOODYEAR, LTD., PAYS DIVIDEND

TORONTO, Ont., April 25.-Another payment of deferred dividends on the preferred stock is being made in conjunction with the regular dividends on both the preferred and prior preference stock of the Goodyear Tire & Rubber Co. of Canada, Ltd. This announcement was contained in a letter addressed to shareholders of the company by C. H. Carlisle, vice-president and general manager.

Prices and Weights of Current Passenger Car Models

					- 5	_
SHIP. WT. PA	SS.	BODY STYLE. 1	PRICE	SHIP. WT. I	PASS.	В
ANDER 2650	SON 5-p	"41" Touring	\$1,195	3400 3380	5-p 5-p	S
	1-p 2-p.	Sp. Touring Coupe	1,445 1,425	3950	7-p	Т
2875	5-p	Sedan Sp. Sedan	1,695 1,895	4320	7-p	S
	5-p	"50"		CHAN 3090	DLEI 2-p	R
	7-p 7-p	Touring Sedan	1,595 1,945	3132	4-p	R
APPER	SON	"6"		3034 3923	5-p 7-p	T
	5-p 5-p	Phaeton Sp. Phaeton	\$1,695 1,850	3248 3309	4-p	R
3145	3-p 5-p	Coupe Sp. Sedan	2,350 2,395	3309	5-p 5-p	C
	5-p	Brougham	2,250	3469 3428	5-p 5-p	S
3815	5-p	"V-8" Phaeton	2,485	3521 3598	7-p 7-p	S
3900	7-p	Phaeton	2,535 2,800	CHEV	ROLL	T
3815	5-р 7-р	Sport Phaeton Sport Phaeton	2,900	1755	"Sup	eric R
	5-p 7-p	Sedan Sedan	3,485 3,585	1870 2015	5-p	T
4340	5-p 7-p	Sport Sedan Sport Sedan	3,750 3,850	2110	2-p 5-p	C
		"ST 8"		2220 CHRY	5-p	S
	5-p 3-p	Sp. Phaeton Coupe	2,550 2,800	-	(11	23/4
******	4-p	Brougham	2,650	2805 2730	4-p 5-p	H
AUBUH	5-p N	Sp. Sedan	2,850	2785	5-p	P
	5-p	Touring	\$795	2935 3060	4-p 5-p	S
2610	5-p	"6-43" Special Touring	1,395	3085 3090	5-p 5-p	C
	5-p 5-p	English Coach Sedan	1,945 1,595	2995	5-n	F
		"8-63"		3225	5-p	188X
	5-p 5-p	Sp. Touring Sedan	1,895 2,550	CLEV	ELAN	D
3510	5-p 7-p	Brougham Sedan	2,895 2,550	2325 2580	5-p 5-p	S
		"8-80"		2750	5-p	Т
	4-p 4-p	Sport Roadster Club Roadster	1,975 2,075	2810	5-p	T
*******	4-p	Sport Broughan		2860 2830	5-p 8-p	200
BARLE	5-p Y	Sedan "6" 6-50	2,000	3000 2870	5-p 3-p	2
2750	5-p	Touring	\$1,395	3040	5-p	920
3100	5-р 5-р	Sp. Touring Sedan	1,495 1,850	3190 3190	5-p 5-p	07 07 07
3150 BUICK	5-p	Sp. Sedan "Standard"	2,250	2990	5-p	E
2750	2-p	Roadster	\$1,150	3675	"MA 4-p	I'sı
2800 2920	2-p 5-p	Roadster Encl. Touring	1,190 1,175	3795 3675	7-p 4-p	Y
2970 2960	5-p 2-p	Touring Encl. Coupe	1,250 1,375	4055	5-p	E
3075	4-p	Coupe	1,565	4000 4100	7-p 7-p	H
	5-p 5-p	Dbl.ServiceSedar Sedan	1,475 1,665		NING	
3050	5-p	Coach "Master"	1,295	4600	7-p	7
0005	(1	20 in. W. B.)	1 905	4500 4700	4-p 4-p	8
3285 3335	2-p 2-p	Roadster Roadster Encl.	1,365 1,400	5000	6-p	5
3465 3540	5-p 5-p	Touring Encl.	1,395	DAG		1
3770	4-p	Coupe	2,125	3750 3800	4-p 4-p	3
3850 3560	5-p 5-p	Sedan Coach	2,225 1,495	4200 3700	4-p 4-p	
3485	3-p	128 in. W. B.) Sp. Roadster	1,750	3800 4200	6-p	1
3550	5-p	Sp. Touring	1,800	4500	4-p 4-p	3
3610 3690	7-p 7-p	Touring Encl.	1,625 1,700	4700 4800	5-p 7-p	04.04
3745 3905	3-p 5-p	Country Club Brougham Seda	2,075			
4030	7-p	Limousine	2,525	3100 3200	2-p 4-p]
3995 3850	7-p 7-p	Sedan Town Car	2,425 2,925	3150 3400	5-p 2-p	
CADIL	LAC	"V-63 Standard	Line"	3500	.5-p	6
4190 4280	2-p 7-p	Roadster Touring	\$3,185 8,185	DAN: 4150	IELS 4-p	,
4200	4-p 5-p	Phaeton	3,185 3,185	4765	7-p	
4610	7-p	Sedan	3,835	4600 5200	4-p 7-p	4
4380 4525	4-p 5-p	Victoria Landau	3,485 3,835	DAV	IS	
4655	7-p	Std. Imperial Custom Built" (132 in.)	4,010	2650 2915	4-p 4-p]
4960			9 075	2750 3070	5-p 5-p]
4260	2-р	Coupe (138 in.)	3,975	3065	5-p	
4400 4490	5-p 5-p	Coupe Sedan	4,350 4,550	2700	5-p	1
4590	7-p	Suburban	4,650	2835 3020	4-p	1
4655 CASE	7-p	Imp. Suburban J. I. C.		3050	5-p 5-p	1
3260 3200	3-p	Roadster Touring	\$1,840	3245 3215	5-p 5-p	1
3470	5-p 5-p	Sp. Touring	1,885 2,160	DOD	GE BI	RO
3570 3640	4-p 5-p	Sub. Coupe Sedan	2,480 2,590	2473 2593	2-p 2-p]
3650	5-p	Brougham "X"	2,590	2567	5-p	
3020	3-р	Roadster	1,570	2695 2708	5-p 2-p	-
3050	5-p	Touring	1,595	2823	2-p	1
	ural)	TOUTHE	1,000	2823	Z-D	

***	5	nts of dar
SHIP.		1
WT. 1		BODY STYLE. PRICE
3400 3380	5-p 5-p	Sedan 2,385 Victoria 2,290
3950 4320	7-p 7-p	Touring 2,225 Sedan 2,975
	DLER	"SS"
3090	2-p	Roadster \$1,795 Roadster 1,785
3132 3034	4-p 5-p	Touring 1.595
3923 3248	7-p	Touring 1,735 Royal Dispatch 1,885
3309		Coach 1,595
3309 3469	5-p 5-p	Chummy Sedan 2,045 Met. Sedan 2,195
3428	5-p	Sedan 4 d. 1,995
3521 3598	7-p 7-p	Sedan 2,195 Limousine 3,095
CHEV	ROLE	T
1755	2-p	rior" (Series K) Roadster \$525
1870 2015	5-p 2-p	Touring 525 Utility Coupe 715
2110	5-p	Coach 735
2220 CHRY	5-p SLER	Sedan 825
	(112	23/4 in. W. B.)
2805 2730	4-p 5-p	Roadster \$1,625 Touring 1,395
2785	5-p	Phaeton 1,495
2935 3060	4-p 5-p	Coupe 1,895 Sedan 1,825
3085	5-p	Imperial Sedan 2,065
3090 2995	5-p 5-p	Crown Sedan 2,195 Brougham 1,965
3225	(118 5-p	3% in. W. B.) Town Car 3,725
CLEV	ELAN	D "31"
2325 2580	5-p 5-p	Touring \$895 Sedan 1,195
2750	5-p	"43" Touring 1,095
2810	5-p	Touring De Luxe 1,195
2860 2830	5-p 3-p	Sp. Touring 1,295 Coupe 1,295
3000	5-p	Coach 1.295
2870 3040	3-p 5-p	Spec. Coupe 1,895 Spec. Sedan 4 d. 1,495
3190	5-p	Sedan De Luxe 1,695
3190 2990	5-p 5-p	Sport Sedan 1,725 Brougham 1,545
COLE		STER"
3675 3795	4-p 7-p	Volante Tour. \$2,325 West. Tour. 2,325
3675 4055	4-p 5-p	Aero-Vol. Tour. 2,475 Brouette Sedan 3,225
4000	7-p	Royal Sedan 3,225 Royal Limousine 3,325
4100 CUN	7-p NINGH	
		"V-6"
4600 4500	7-p 4-p	Touring \$6,300 Sp. Touring 5,800
4700 5000	4-p 6-p	Coupe 7,150 Sedan 7,650
DAG		"6-70"
3750 3800	4-p 4-p	Roadster \$3,500 Sp. Touring 3,500
4200	4-p	Petite Coupe 4,500
3700 3800	4-p 6-p	Phaeton 3,500 Tourer 3,500
4200	4-p	Petite Sedan 4,500
4500 4700	4-p 5-p	De Luxe Coupe 4,750 Sedan 4,700
4800	7-p	Sedan 4,750 "6-60"
3100	2-p	Roadster 1,785
3200 3150	4-p 5-p	Sp. Touring 1,785 Touring 1,985
3400 3500	2-p .5-p	Coupe 2,345 Sedan 2,345
	IELS	"24-38"
4150 4765	4-p 7-p	Touring \$6,800
4600	4-p	Touring 6,900 Sedan 7,600
5200 DAV	7-p	Sedan 7,800
2650	4-p	M. o'War Road. \$1,495
2915 2750	4-p 5-p	LegionaireTour. 1,495 Phaeton 1,395
3070	5-p	Sedan 1,995
3065 2700	5-p 5-p	Berline Sedan 1,995 Brougham 1,595
2835	4-p	Roadster 1,795
3020 3050	5-p 5-p	Phaeton 1,695 Brougham 1,895
3245	5-p	Sedan 2,295
3215 DOD	5-p GE BR	Berline Sedan 2,295 OTHERS
2473	2-p	Roadster \$855
2593 2567	2-p 5-p	Special Roadster 955 Touring 885
2695 2708	5-p 2-p	Spec. Touring 985 Coupe "B" 995
2823	2-p	Spec. Coupe. "B" 1,095
2995	5-p	"B" Sedan 1,095

SHIP.			
WT. P	ASS.	BODY STYLE. P THERS (Con'd)	RICE
3077	5-p		1,195
3020 3107	5-p 5-p	Spec. "B" Sedan Sedan A Spec. "A" Sedan	1,245 1,830
2723	5-p	Coacn	1,095
2823 DORR	5-p	Spec. Coach	1,195
4120	4-p	Pasadena Tour.	\$4,150
4115	7-p 4-p	Touring Coupe	4,150 4,985
4200	5-p	Sedan	5,550
4310 DUESI	7-p	Sedan	5,800
DUES	ENDE	straight "8"	
3920	3-p		\$6,500 6,250
3700 3920	5-p 7-p	Phaeton Phaeton	6,750
3980	4-p	Sp. Phaeton	6,500
4000 4350	4-p 7-p	Coupe Sedan	7,500 7,800
DU P	ONT	"D"	
3300 3550	2-p 5-p	Roadster Touring	\$2,600 2,600
3800	7-p	Touring	2,750
3550 DURA	5-p	Touring Sedan "A-22"	3,400
2300	2-p	Roadster	\$1,080
2225 2300	5-p 5-p	Touring F. W.	830 B. 940
2395	4-p	Coupe	1,160
2505	5-p	Sedan	1,190
2430 ELCA	5-p R	Coach "4-41"	1,050
2560	5-p	Touring	995
2585 2641	5-p 5-p	Demi Sp. Touring Sportster	1,095 1,195
2779	5-p	Coach Sedan	1,295
2900 2779	5-p 5-p	Sedan Brougham 3d	1,495 1,265
2110		"6-51"	
2600	5-p 5-p	Demi Sp. Tour. Sp. Touring	1,220 1,420
2779	5-p	Sp. Sedan	1,495
2900	5-p	Sedan	1,720
2779	5-p 5-p	Brougham Sp. Brougham	1,490 1,620
0700		"8-80"	
3700	5-p 7-p	Sp. Touring Sp. Touring	2,165 2,265
3000	3-p	Coupe	2,315
4050	5-p 7-p	Sedan Sedan	2,265 2,765
4000	5-p	Brougham	2,865
ESSE2	5-p	Touring	\$900
2395	5-p	Coach	895
FLIN7 3145	г 5-р	"55" Touring	1,595
0140	4-p	Sport Roadster	\$1,950
3310 3455	4-p	Sp. Touring Coupe	2,050 2,195
3585	4-p 5-p	Sedan	2,285
*******	5-p	Brougham 4 d.	2,735
2400	5-p	Touring	1,285
******	5-p	Sedan 4 d	1,680
2720 FORD	5-p	Brougham	1,760
		tarter and Dem. 1	
1369	2-p	Runabout With Balloon Tin	\$260 res 305
1494	5-p	Touring	290
Wit	h Sta	With Balloon Tin	
1521	2-p	Runabout	845
1644	5-p	Balloon Tires Touring	370 375
		With Balloon Tir	res 400
1749	2-p	Coupe With Balloon Tin	520 res 545
1882	5-p	Sedan, Tudor	580
1927	K.n	With Balloon Ti	
1021	5-p	Sedan, Fordor With Balloon Ti	660 res 685
FRAN 2800	KLIN		90 000
2845	3-p 5-p	Sport Roadster Touring	2.650
2965	3-p	Coupe	2,700 3,200
3175 3080	5-p 5-p	Sedan Sport Sedan	3,350
3275	7-p	Limousine	3,500
3135 GARI	7-p NER	Cabriolet "Series 5"	4,400
2520	3-p	Roadster	\$945
2545 2550	3-p 8-p	Spec. Roadster Radio Roadster	1,045 1,135
2555	5-p	Touring	995
2610 2650	5-p	Touring Special Touring Touring De Luy	1,095
2590	5-p 5-p	Touring "A"	e 1,145 1,045
2750	5-p	Radio Touring	1.145
2680 2895	5-p 5-p	Coupe Sedan	1,275 1,475
3070	5-p	Sp. Sedan	1,595
******	5-p	"8" Touring	1,995
3510	5-p	Brougham	1,995
*******	5-р	Sedan	2,495

	SHIP.	PASS.	BODY STYLE. I	RICE
	GRAY 1750	5-p	"O" Touring	\$630
	1880	a-p	Coupe	845
	2020 2130	5-p 5-p	Sedan Royal Sedan	8 95 9 75
	H C S	4-p	Touring	\$2,650
	3950 4010	4-p	Coupe Sedan	3,350 3,350
	HAYN	IES	"60"	
	3295 3650	5-p 5-p	Touring Brougham	1,600 2,200
	3765	5-p	Sedan	2,300
	HERT 3360	5-p		\$1,695
	HUDS 3425		"Super Six" Phaeton	1 500
	3450	7-p 5-p	Coach	1,500 1,250
	3585 3675	5-p 7-p	Sedan Sedan	1,695 1,795
		OBIL	E "R" 4 Roadster	@1 99E
	2595 2745	2-p 5-p	Touring	\$1,225 1,225
	$2760 \\ 2,860$	2-p 4-p	Coupe Coupe	1,350 1,595
	2895 2,975	5-p 5-p	Club Sedan Sedan	1,375 1,800
	2,010		"E" 8	
	3135	3-p 5-p	Roadster Touring	1,975 1,975
	3,295 3410	4-p 5-p	Coupe Sedan	2,325 2,375
	JEWE	TT	"23-25"	
	2835	4-p 5-p	Roadster Touring	\$1,630 1,205
1	3015	5-p 3-p	DeLuxe Touring Bus. Coupe	1,320 1,340
	3025	5-p	Sedan	1,580
	3805	5-p 5-p	DeLuxe Sedan Coach	1,780 1,260
	2990 3110	5-p 5-p	Brougham Sp. Brougham	1,415 1,555
	JORD		bp. Drougham	1,000
	3420	5-p	(120 in. W. B.) Brougham 4 d.	\$2,385
l	3375	4-p	Victoria	2,385
	3260	4-p	Blueboy Touring	2,095
	3330	2-p	Playboy Road.	2,575
	3340	5-p 3-p	Touring Friendly "3"	2,575 2,875
	3625 3520	5-p 4-p	Brougham Victoria	2,875 2,775
	3525	5-p	Sedan	2,975
	*******	7-p 7-p	Sedan Suburban Sedan	3,325 3,375
	KISS1 2980		Dhastan Std	01 000
l	3170	5-p 5-p	Phaeton Std. Phaeton De Lux	\$1,685 e 1,885
ı	3190	4-p 7-p	Tourster Touring	2,085 1,985
١	3130 3530	2-p 2-p	Speedster Enc. Speedster	2,185 2,785
-	3430	4-p	Coupe	2,585
1	3530	5-p 5-p	Brougham Seda	1,895 n 2,685
1	3530 4070	5-p 7-p	Victoria Sedan	2,655
1	4010	7-p	Berline Sedan	8,485
	*******	2-p	"8" Speedster	2,485
	*******	4-p 2-p	Speedster Enc. Speedster	2,585
1	*******	5-p	Brougham	2,985
1	*******	5-p 7-p	Victoria Sedan	2,985 3,485
	*******	7-p	Berline Sedan	3,585
1	LEAL		"Concord"	
	*******	5-p 5-p	Touring (Enc.)	\$1,595 1,695
	*******	5-p 5-p	Spec. Touring Sedan	1,798 2,188
	*******	5-p	Spec. Sedan	2,448
	*******	2-p	"Minute Man" Roadster	2,148
	*******	5-p	Touring	2,095
	*******	7-p 5-p	Touring Lark Touring Cal. Touring	2,348
	*******	5-p 7-p	Cal. Touring	2,498
		5-p	Royal Coach	2,49
	*******		Brougham	2,898
	*******	5-p 5-p	Sedan	2,000
	LINC	5-p 5-p	Sedan	
	LINC 4050 4290	5-p 5-p COLN 2-p 7-p	Sedan Roadster Touring	\$4,000
	LINC 4050	5-p 5-p COLN 2-p 7-p 4-p	Sedan Roadster Touring Phaeton Coupe	\$4,000 4,000 4,600
	LINC 4050 4290 4215 4380 4375	5-p 5-p COLN 2-p 7-p 4-p 4-p 4-p	Sedan Roadster Touring Phaeton Coupe Sedan	\$4,000 4,000 4,600 4,800
	LINC 4050 4290 4215 4380	5-p 5-p COLN 2-p 7-p 4-p 4-p	Sedan Roadster Touring Phaeton Coupe	\$4,000 4,000 4,600 4,800 4,900 5,100 5,300

Prices and Weights of Current Passenger Car Models

	ASS.	BODY STYLE, I LE "48"	PRICE
5030	4-p	Sportif Tour.	\$7,460
53 30 560 0	7-p	Touring Victoria Sedan	7,460 10,050
5464	5-p 7-p	Brougham	10,040
5640	7-p	Touring Lim.	9,500
5868	7-p	Encl. Drive Lim	10,050
5624	7-p	Cabriolet	10,300
McFA	RLAN	"6" "SV"	
3700	2-p	Roadster	\$2,650
	2 -p 5-p	Spec. Roadster	2,900
3600	7-p	Touring Touring	2,650 2,750
3850	4-p	Coupe	3,100
3850	4-p	Coupe Sedan	3,180
0000	5-p 5-p	Spec. Sedan	3,180 3,180
3850	7-p	Sedan	3,280
************	5-p 7-p	Sub. Sedan Sub. Sedan	3,380 3,480
******	5-p	Brougham	3,180
********	5-p 5-p	Brougham 4d. Coach Brougham	3,180
*******	0-0	4d.	3,180
*******	5-p	Town Car	4,600
1600	2-p		\$5,400
4600	4-p	Sp. Touring	5,600
4700 4900	7-p 4-p	Touring Coupe	5,700 6,720
5200	4-p	Tour. Sedan	6,720
5200	7-p	Tour. Sedan	6,810
	6-p 7-p	Sedan Sedan	6,720 6,810
	7-p	Spec. Sedan	6,810
******	7-p	Enc. Sedan	7,110
5200	7-p 7-p	Town Car	7,110
MARM	ON	"74"	
3,695	2-p 5-p	Roadster Club Phaeton	\$3,165 3,490
3604	5-p	Phaeton	3,165
3704	7-p	Touring	3,165
3799 3729	5-p 2-p	Brougham Coupe Coupe de Luxe	9.455
3869	5-p	Sedan	3,295 3,775
3859 3999	5-p	Sedan de Luxe Sedan	3,775
3974	7-р 7-р	Sedan de Luxe	3,370 3,850
3969	5-p	Sedan Limousine	3,900
3999 MAXW	7-p ELL	Sedan Limousine	3,975
2130	2-p	Roadster	\$885
2275 2210	2-p	Sp. Touring	975
2410	5-p 5-p	Touring Sp. Touring	895 1.055
2255	2-p	Club Coupe	995
2405 2440	4-p 5-p	Std. Coupe Club Sedan	1,195 1,045
2580	5-p	Std. Sedan	1.095
2595	5-p	Spec. Sedan	1,245
2785 MERC	5-p E R	Trav. Sedan	1,585
3860	3-p	Runabout	\$4,500
3950 3900	4-p	Touring	4,500
1070	4-p 2-p	Sporting Coupe	4,500 6,500
1240	4-p	Sport Sedan	6,500
1350 1300	4-p	Tour. Limousine	
MOON	4-p Se	Brougham cries "A"	6,500
2440	5-p	Roadster	1,295
2460 2605	5-p 5-p	Sp. Touring Sedan 2d	1,195 1,595
2755	5-p	Petite Sedan 4 d.	1,685
2760		Newport	
2760 2920	5-p 5-p	Touring Sedan	1,495 1,815
3090	5-p	Petite Sedan	1,915
2860	N	letropolitan	
3020	5-p 5-p	Touring Sedan	1,515 1,995
3190	5-p	Sp. Sedan	2,095
3270	5-p	London	1,985
3590	5-p	Petite Sedan Special" Roadster	2,540
NASH 2870	9	Special"	
2960	2-p 5-p	Roadster Touring	\$1,095 1,095
3120	5-р	Sedan	1,225
3270	5-p	Sedan 4d. 'Advanced''	1,545
	(12	1 in. W. B.)	
3320	3-p 5-p	Roadster	1,375
3400 3550	5-p 5-p	Touring Sedan 2 d.	1,375
	0-p	'Advanced"	1,485
2640	(12	7 in. W. B.)	0.000
3640 3480	4-p 7-p	Victoria Touring	$\frac{2,090}{1,525}$
3830 3750 OAKL	7-p	Sedan	2,290
3750	5-p	Coupe 4 d.	2,190
	AND	"6-54" Roadster	\$1,095
2420	3-D		
2420 2510 2485	3-p 3-p 5-p	Sp. Roadster Touring	1,195 1,095

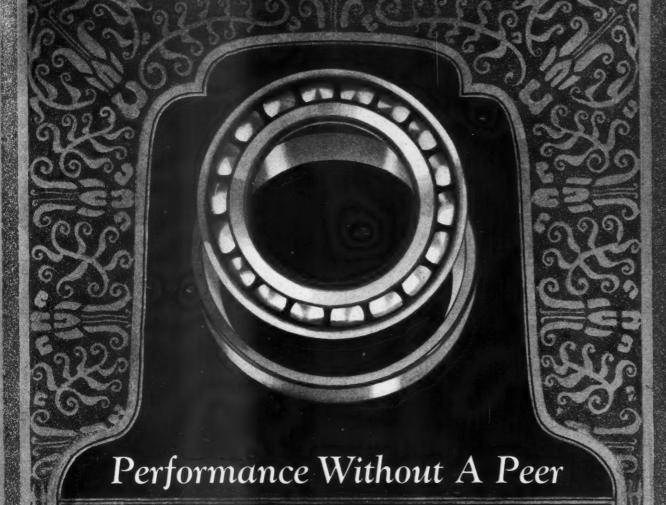
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SHIP.				
	ASS.	BODY ST		
OAKL. 2620	AND	ACon'dQ Coach	L L	
2620	5-p 3-p	Landau	Coune	1,215 1,295
2720	4-p	Coupe		1,495
2700	5-p	Spe. Sec	lan	1,375
2860 2885	5-p 5-p	Sedan Landau	Coden	1,545 1,645
		E "30"	seuan	1,040
2145	2-p	Roadster		\$890
2270	2-p	Sp. Road	lster	985
2200 2360	5-р 5-р	Touring Sp. Tour	ine	890 1,015
2330	2-p	Bus. Co	upe	1,045
2460	4-p	Coupe		1,175
2410 2570	5-p 5-p	Coach Sedan		1,075
2740	5-p	DeLuxe	Sedan	1,285 1,375
OVER	LAND	"91" A		2,0.0
1770	(10	0 in. W.	B.)	9405
1769 1863	2-p 5-p	Roadster Touring		\$495 495
2177	5-p	Sedan		715
2130	5-p	Coupe S	edan	585
	/22	"93" 6	10 s	
	5-p	3 in. W. Sta. Sed	B.)	985
*******	5-p	Sedan D		
PACK.		"6"		
3643	4-p	6 in. W. Roadster	B.)	\$2,785
3653	5-p	Touring		2,585
3595	4-p	Sp. Tour	ing	2,750
3753	4-p	Coupe		2,585
3876 3937	5-p 5-p	Coupe Sedan		2,685 2,585
4143	7-p		imousine	
	(13	3 in. W.	B.)	
3793	7-p	Touring		2,785
4043 4143	7-p 7-p	Sedan Li	monsina	2,785
31.30	1-1	Sedan Li	mousing	2,000
		6 in. W.	B.)	
4060	4-p	Runabou	t	3,950
4090 4023	5-p 4-p	Touring Sp. Tour	ing	3,750 3,900
4242	4-p	Coupe	me	4,650
4337	5-p	Coupe		4 825
4528	5-p	Sedan		4,750
4535	5-p	Sedan Li 3 in. W.	mousine B.)	4,800
4199	7-p	Touring	2.,	8,950
4655	7-p	Sedan		5,000
4710 PAIGE	7-p	Sedan Li "21-24"	mousine	5,100
3875	4-p	Phaeton		\$2,165
3935	7-p	Phaeton		2,165
4050	5-p	Broughan		2,195
4050 4325	5-p 7-p	Broug. D Sedan D	e Luxe	2,395 2,840
4370	7-p	Sub. Lin	nousine	2,965
PEERI		"6-70"		***
3050 3175	2-p 5-p	Roadster Touring		\$2,385 1,895
3350	7-p	Touring		1 995
3525	5-p	Coupe		2,495
3550	5-p	Sedan		2,565
3725 3825	7-p 7-p	Sedan Limousin		2,765 2,925
	Eq	uipoised '	18"	
3950	4-p	Phaeton		2,945
3995 4300	7-p 5-p	Phaeton Town Br	nucham	2,990 3,895
4310	5-p	Town Se	dan	3,895
4400	7-p	Sub. Sed	an	3,995
4525 4100	7-p	Berline I	Lim.	4,195 3,545
4150	4-p 5-p	Sub. Con		3,595
PIERC		ROW		
4950	0 -	"33"		0E 0E0
4350 4500	2-p 5-p	Runabout Touring	•	\$5,250 5,250
4780	3-p	Coupe		6,800
4800	4-p	Sedan		6,900
4960 4750	7-p	Sedan Coupe S	adan	7,000
4730	4-p 6-p	Broughar	edan n	6,900 6,800
4850	7-p	Limousin		7,000
5060	7-p	Enclosed	Lim.	7,000
4780 4730	7-p 6-p	French l Landaule	Jim.	7,000
1100	0-p	"80"		1,000
3205	2-p	Roadster		2,895
3260	4-p	Sport To	uring	3,095
3385 3 36 5	7-p 4-p	Phaeton Coupe L	andan	2,895 3,820
3335	4-p	Coupe		3,695
3440	5-p	Sedan		3.895
3560 3615	7-p	Sedan Enc. Driv	to T.im	8,995 4,045
REO	7-p	Enc. Driv)	1,010
3350	3-p	Sp. Road	lster	1,765
3182	5-p	Sp. Tour	ring	1,595
3450 3400	4-p 5-p	Coupe Sedan 4d		1,975 1,595
3545	5-p	Sedan		2,085
3705	5-p	Broughar	n 4d.	2,285
REVEI 3900		Sp. Pond	atan	29 750
1000	2-p	Sp. Road	attl	\$2,750

		BODY STYLE.	PRICE
REVE	RE (C	ont'd)	
4050 4300	5-p 5-p	Touring Sedan	2,750 3,800
3700		"M" Roadster	3,200
3800 3970	4-p 5-p	Sportster Touring	3,200 3,200
4400	5-p	Sedan	4,000
	ENBAC		1,000
2864	4-p 5-p	Sp. Roadster Sp. Touring	\$1,595
2787 3040	а-р 4-р	Coupe	1,395 1,895
3027	5-p	Coach Brough.	1,595
3143	5-p	Sedan	1,995
3326	4-p	Sport Phaeton	2,195
3440	4-p	Coupe	2,695
3585 3485	5-p 5-p	Sedan Coach Brough.	2,795 2,395
ROAM	IER	"6-54-E"	2,000
0100	(11	8 in. W. B.)	60.605
3100 3100	2-p 4-p	Roadster Tourer	\$2,685
3300	4-p	Sp. Touring	2,485 2,750
*******	7-p	Touring	2,685
******	3-p	Cabriolet 8 in. W. B.)	3,285
4100	5-p	Spec. Sedan	4,250
4200		Suburban Sedan "4-75-E"	
3650	4-p	Sport "4-85-E"	3,650
3200	2-p	Spec. Speedster	3,785
ROLL			
2360	5-p	Touring	\$1,155
2405	3-p	Coupe	1,325
2595	5-p 5-p	Brougham Sedan	1,325 1,455
2575 ROLL	S-ROY	CE	1,400
		Chassis	**
**M	anufac	turers do not que	ote list
STAN	LEY	"252"	
3400	5-p	Phaeton	\$2,500
3800	5-p	Sedan	3,300
STAR 1725	2-p	Roadster	\$540
1830	5-p	Touring	540
******	2-p	Coupster	625
1915	2-p	Coupe	715
2155	5-p 5-p	Coach Sedan	750 820
	RNS-K	NIGHT	020
		"B" (4)	
0000	4-p	Coupe Roadster	
3775 4250	5-p 5-p	Touring Sedan	1,595 2,095
3750	4-p	Coupe Brougham	
	5-p	Brougham	2,095
	9 m	"S" (6)	2 405
3775	2-p 5-p	Roadster Touring	2,495 2,395
3850	7-p	Touring	2,495
4025	2-p	Coupe	3,395
4275	4-p	Coupe Sp. Coupe	3,150
3950 4275	5-p	Sedan	2,945 3,395
	7-р	"C" (6)	
3525	4-p	Touring	1,875
3540	5-p	Touring . Sport Coupe	1,875
3550 3650 •	2-p 5-p	Coupe Brougham	2,185
3700	5-p	Sedan	2,475
3700	5-p	Brougham	2,475
emma-	5-p	Brough. Sedan	2,480
STERI		KNIGHT Sp. Touring	\$2,250
3200 3235	4-p 5-p	Phaeton	2,150
3300	7-p	Touring	2,400
3200	2-p	Coupe Roadster	3,100
3450	5-p	Sedan	2,800
3550	7-p	Sedan	3,050
3450 3300	4-p 4-p	Sp. Brougham Coupe	2,750 3,200
		URYEA	0,200
4200	2-p	Roadster	\$8,150
4400	7-p	Touring	7,500
4250 4800	4-p	Sp. Touring	7,750
4600 4600	4-p 4-p	Coupe Sedan	9,000
4800	6-p	Sedan	9,675
1800	6-p	Town Brougham	10,175
4800	6-p	Vestibule Limou.	9,675
1800	7-p	VestibuleLimou.	10,175
4800 4800	7-p 7-p	% Limousine Cabriolet	10,175 10,175
STUDI	EBAKE	SK	
	St	andard Six	21 105
2760 2870	3-p 5-p	Du. Roadster Du. Phaeton	\$1,125 1,145
2945	3-p	C. Club Coupe	1,845
3110	5-p	Coupe	1,445
2980	5-p	Coach	1,295
3175	5-p	Brougham	1,465
3260 3280	5-p 5-p	Sedan Berline	1,595 1,680
0000	0-1		4,000

WT.	PASS.	BODY STYLE.	PRICE
		KER (Con'd)	
		Special Six	1 405
3360 3440	4-p 4-p	Du. Roadster Sp. Roadster	1,495 1,645
3475	5-p	Du. Phaeton	1,495 1,695
3675	4-p 4-p	Club Coupe Victoria	1,895
3785	5-p	Brougham	1,795
3885	5-p 5-p	Coach Sedan	1,595 2,045
3780	5-p	Berline	2,060
3785	7-p	Big Six Du. Phaeton	1,875
4030	5-p	Coupe	2,450
4150	5-p 7-p	Brougham 4 d. Sedan	2,575 2,575
4200	7-p	Berline	2,650
STUT		"6-94"	00 002
3585 3856	3-p 5-p	Roadster Touring	\$2,395 2,895
3950	4-p	Coupe	3,050
4020	5-p	Sedan "6-95"	3,050
3896	5-p	Sportster	3,035
3966 4190	7-р 5-р	Tourster Sportbrohm	3,070
4345	7-p	Suburban	3,785 3,935
4444	7-p	Berline	4,035
VELI		"60"	
3030 2840	4-p 5-p	Sp. Roadster Touring	\$1,650 1,275
3025	0-D	Club Phaeton	1,425
3150 3100	4-p 5-p	Coupe Sedan	1,825 1,675
3340	5-p	Royal Sedan	1,925
3083 3005	5-p	Coach 2d. Coach 4d.	1,425 1,450
	5-p ГСОТТ		1,400
3150	5-p	Spec. Touring	\$1,970
3300	4-p	Brougham 3d.	2,320
3300	5-p	"60" Sedan	2,825
		NTE CLAIRE	2,020
		"A-68"	
3320	5-p	21 in. W. B.) Touring	\$2,475
3500	5-p	Brougham	3,875
	/1	"B-68" 27 in. W. B.)	
3265	4-p	Roadster	2,985
3335	5-p	Traveler	3,085
3500 3495	7-p 4-p	Phaeton Coupe	2,885 3,785
3625	5-p	Sedan	3,885
3635 3570	7-p. 5-p	Sedan Brougham 4d.	3,900 3,900
3710	7-p	Limousine	4,085
"C-68"	7-p Cus	Town Car tom Built 127 in.	5,500 W. B.)
3265	4-p	Roadster	3,185
3625 3635	5-p 7-p	Sedan Sedan	4,085
3570	5-p	Brougham	4,100
3710	7-p "W-6"	Limousine (127 in. W. B.)	4,285
3265	4-p	Roadster	2,485
3335 3500	5-p 7-p	Gray Goose Trav	7. 2,485 2,885
3495	4-p	Coupe	2,985
3570 3625	5-p 5-p	Brougham Sedan	3,185 3,185
3520	5-p	Sedan	3,185
3635	7-p	Sedan Limousine	3,285 3,385
3710 WILL	7-p	IGHT	0,000
		"65"	
2681 2768	2-p 5-p	Roadster Touring	\$1,295 1,295
3062	3-p	Coupe	1,495
3115 3111	5-p	Sedan	1,575 1,495
3111	5-p	Coupe Sedan	
3059	7-p	Touring	1,425
3431	7-p	Sedan	2,095
******	2-p	Roadster	1,845
********	5-p 5-p	Touring Coupe Sedan	1,845 2,145
******	5-p	Brougham	2,145 2,295
*******	4-p 5-p	Coupe Sedan	2,345 2,495
		TAXICABS	
Weigh	it B	Take and Model	Price
4100 2200	D	hecker riggs	\$2,500 1,950
3340	H	. C. S.	1,975
3500 3800		elsey E ennant	1,925 2,895
4100	P	remier 4B	2,890
3200		auch & Lang T	2,850 2,750
3672	R	eo V	2,185
3575 3800	T	raveler Villys-Knight A	2,500 2,250
8775	Y	ellow O-4	2,400
3600	Y	ellow A-2	2,150

Current Passenger Car Specifications (This list comprises cars distributed on a national basis)

		TIF	RES				ENGIN	E						trical tem	Clutch	Gear- set	Uni- versal Joints	REAR	AXLE	1	BRAKE	s	Steer- ing Gear	Rear Spring
	Wheelbase (Ins.)	Standard Size (Ins.)‡	Balloon Equipment	Make	Model	Number of Cylinders, Bore and Stroke (Ins.)	Rated Horsepower N.A.C.C.	Valve Arrangement	Piston Material	Number of Main Crankshaft Bearings	Oiling System	Carbureter Make	Ignition System Make	Generator and Starter Make	Type and Make	Make	Type and Make	Type and Make	Gear Ratio;	Foot, Type and Location	Hand, Type and Location	Four-Wheel Brake, Type	Make	Type and Length
Anderson 41 Anderson 50 Apperson 6 Apperson V-8 Apperson St-Away "8"	122	31x5.2 33x4.9 22x5.7 33x6.7 32x5.7 32x6.2	Yes Yes Yes Yes	Cont Cont Own Own Own	7U 8R 6 8 St. "8"	6-318x414 6-338x412 6-338x414 8-314.5 8-318x412	23 .44 27 .34 24 .40 33 .80 31 .25	L	CCCCC	3	PC PC FP PC PC	Zen Zen Str Sch Sch	Wes Rem Rem Rem Rem	Wes Rem Rem Bij Rem	P-B&B P-B&B P-Roc D-Own D-Own	Dur Dur Mec Own Own	R-Uni R-Uni M-Stl M-Thi M-Ste	1/2 Sal 3/4 Sal 1/2 Col 1/2 Own 1/2 Own	4.75 4.50 5.10 4.66 {4.25	E-R E-R E-R E-R B-F	E-T E-T I-R I-R B-F	Mec* Mec* Mec* Mec* Mec*	Gem Gem Lav Own Ros	S-58 S-58 J-48 J-49 J
Auburn	108 114 129	29x4.4	Yes Yes	Lye Cont Lye	CF 7U 2-H	4-35/8x5 6-31/8x41/4 8-31/8x41/2	21.03 23.44 31.25	L L L	A C C	5 4 5	PC PC PC	Str Sch	Rem Rem Rem	Rem Rem Rem	P-B&B P-Lon	W-G W-G	M-Uni M-Uni	1/2 1/2 Col 1/2 Col	4.63	E-R B-F	E-T E-T	Mec*	Jac Ros	S-57 S-57
Barley	120	33x4 31x4.9 32x5.7		Cont Own Own	7U Sta Mast	6-31/8×41/4 6-3 ×41/2 6-33/8×43/4 8-31/8×51/8	27.34	I	CCCC	4 4 4 3	PC PC PC	Str Mar Mar	Del Del Del	Del Del Del	P-B&B D-Own D-Own	Ful Own Own	R-M&E M-Own M-Own M-Spi	34 Col 34 Own F-Own	4.90 4.90 {4.73 4.54 4.50	E-R E-F E-F	I-R I-R I-R	None Mec Mec	Jac Jac Jac	S-56 V-48 V-475/8 N-54
Case X Case JIC Case Y Case Y Chandler SS Chevrolet "K"	138 122 122 132 132 123 103	32x41 32x6.2	Yes* Yes Yes Yes	Cont Cont Cont Own Own	8R 8R 6T SS "K"	6-3 ³ -x4 ¹ / ₂ 6-3 ³ -4x5 6-3 ⁵ -8x5 ¹ / ₄ 6-3 ¹ / ₂ x5 4-3 ¹ / ₄ x4		L L L	CCCCC	4 4 4 4 3	PC PC PC PC PS	Ray Sch Sch Sch Zen Car	Del Del Del Bos Rem	Del Del Del Bos Rem	D-Own D-Own D-Own D-Own P-B&B P-Own	Own Own Own Own Own	R-Sne R-Sne R-Sne R-Own M-Own	1/2 Col 1/2 Col 3/4 Col 3/4 Own 1/2 Own	4.90 4.90 4.45 4.45 3.82	E-R I-F E-R E-F E-R	I-R E-T I-R E-T I-R	Hyd Hyd Hyd Mec None	Jac Lav Jac Own Own	S-59½ S-55 S-57 S-58½ S-54
Carysler Six Cleveland "31" Cleveland 43 Cole Master Lanningham Võ	11834 10832 115 127 132	30x5.7 30x4.7 31x5.2 34x7.3 33x5	Yes Yes	Own Own Own Nor Own	Six "31" 43 311 V6	6-3 x4 ³ / ₄ 6-2 ⁷ / ₈ x4 ¹ / ₄ 6-3 ¹ / ₈ x4 ³ / ₄ 8-3 ¹ / ₂ x4 ¹ / ₂ 8-3 ³ / ₄ x5	19.84 23.44	L L L	A C C A C	7 3 3 3 3	PC PC PC PC FP	Bal Joh Seh Joh Str	Bos Bos Del Del	Rem Bos Bos Del Del	P-B&B P-B&B D-Nor D-Own	Own Own Own Nor Own	M-Uni R-Pic R-Sne M-Spi R-Sne	1/2 Own 1/2 Own 1/2 Own F-Col F-Tim	4.60 4.90 4.90 4.70 4.23	E-R	E-T E-T I-R I-R	Mec* Mec* None None	CAS CAS Gem Gem	S-517/8 S-50 S-53 S-57 J-62
Dagmar 6-60 Dagmar 6-70 Daniels 24-36 Daris 90 Daris 91 Daris 91 Daris 91 Daris Duris Duris 91	133 115 116 116 132 (134	32x4 ¹ / ₂ 33x5 33x5 31x5 .2 30x5 .7 32x6 .2 33x5	Yes* Yes* Yes Yes Yes Yes	Cont Cont Own Cont Cont Own Own	8R 6J 24-38 7U 8R 6-80 "A"	6-33 x41 2 6-33 4x5 8-31 2x51 4 6-31 x41 4 6-33 x41 2 4-37 x41 2 6-4 x5 8-27 x5	33.75	L L L L L	C C C C A C A	4 4 3 4 4 3 7 3	PC PC PC PC PC Sp FP	Sen Sch Zen Str Str Ste Str Str	Del Del Del Del N.E Bos Del	Del Del Del Del Del N.E Bos Del	P-B&B D-B-L P-Own P-B&B P-B&B D-Own D-Own P-Own	War B-L Own W-G W-G Own War Own	M-Spi M-Spi M-Spi M-Pet M-Pet M-Own R-Spi R-Cli	1/2 Tim 1/2 Tim F Tim 1/2 Tim 1/2 Tim 1/2 Own 1/2 Tim 1/2 Own	5.10 4.90 4.23 5.10 5.10 4.16 4.23 4.90	E-R E-F E-F E-R	E-T I-R I-R I-R I-R I-R I-R E-T	None None Hyd Hyd None None Hyd	Gem Gem Ros Ros Cwn Ros Ros	S-52 S-52 S-52 S-52 S-55 S-60 S-59
Dupont	124 109	32x6.2 31x4	Yes Yes*	Wis Cont	Y Spec	6-338x5 4-378x414	27.34 24.03		C A	3 3	PC PC	Sch Til	Bos A-L	Bos A-L	D-Lon P-Own	Cpl War	M-Uni M-Spi	1/2-Eat 3/4-Own	4.70 4.33		I-T I-R	Hyd Mec*	Jac Own	S-59 S-50 ²
Elcar 4-41 Elcar 6-51 Elcar 8-80 Essex 6	113	31x4 31x4 32x6.2 33x4.9		Lyc Cont Lyc Own	CF 7U H 6	4-35/8x5 6-31/8x41/4 8-31/8x41/2 6-21/6x41/4	21.03 23.44 31.25 17.32	L	A C C A	5 4 5 3	PC PC PC Sp	Zen Str Sch Ste	A-L A-L Del Bos	A-L A-L Del Bos	P-B&B P-B&B P-B&B D-Own	W-G W-G W-G Own	M-Mec M-Mec M-Spi M-Spi	1/2-Sal 1/2 Sal 1/2 Sal 1/2 Own	4.70 4.70 4.71 5.60	E-R E-F	E-T E-T E-T I-R	Mee* Mee* Hyd None	Ros Ros Ros Own	S-51 E-51 S-58 S-547/8
lint	120 100	30x5 : 2 32x6 : 2 30x3 ! 2	Yes Yes*	Cont Cont Own	6-W 55 T	6-31/8x41/4 6-33/8x5 4-33/4x4	23.44 27.34 22.50	L	CCC	4 7 3	PC PC Sp	Car Str (Own Kin	A-L DeJ Own	A-I. DeJ Own	P-Own P-Own D-Own	War War Own	M-Spi M-Spi M-Own	34 Ad 34 Ad 1/2 Own	4.77 4.77 3.63	E-F E-F E-T	E-T E-T I-R	Hyd Hyd None	Ros War Own	S-50 S-55 O-431/2
Franklin	112 117 125	31x5.2 32x4 30x5.2 30x5.7 30x312	Yes* Yes Yes	Lye Lye Lye Own	11-A CE S 2-H R	6-314x4 4-314x5 6-318x41/2 8-31/8x41/2 4-35/8x4	25.35 21.73 23.44 31.25 21.03	L L L	A C C C	5 4 5 3	PC PC PC PC Sp	Zen Seh Seh Sco	Wes Rem Rem A-L	Wes Rem Rem A-L	P-B&B P-B&B P-B&B P-Own	Mec Mec Mec Det	M-Spi M-Pet M-Pet M-Mec R-Sne	1/2 Own 34 Fli 1/2 Col 1/2 Col 1/2 Tim	4.80 4.63 4.70 3.90		E-R I-R E-T E-T E-T	None Mec Mec None	Ros Gem Gem Own	E-38 S-5114 S-57 S-57 Q-30
H.C.S. Series 6 Haynes 60 Hertz D-1 Hadson Super 6 Apmobile Series R Hupmobile E-1	126 121 114 1273 115	33x5 33x5.7 31x4 33x6.0 31x5.2	Yes Yes Yes Yes Yes	Own Own Cont Own Own Own	6 60 7U 6 R E	6-3½x5 6-3½x4¾ 6-3½x4¼ 6-3½x5 4-3½x5 4-3¼x5½ 8-2¾x4¾	29.40 29.40 23.44 29.40	I L L L	C C C A C C	3 3 4 3 5	FP PS PS Sp PC PC	Str Ray Zen Det Str Str	Del Kin Del Bos Wes A-K	Del L-N Del Bos Wes Wes	D-B-L D-War D-Lon D-Own P-Lon P-Lon	B-L Mec Det Own Own Det	M-Spi M-Uni M-Spi M-Spi M-Uni M-Uni	34 Own 34 Own 1/2 Tim 1/2 Own 1/2 Own 1/2 Own	4.63 4.41 4.72 4.45 4.90 4.63	I-R E-R E-R E-R	I-R E-T E-T I-R I-R E-T	None None None None None Hyd	Gem Jac Ros Gem Ros Ros	S-56 S-54 ¹ / ₂ S-56 S-56 ¹ / ₂ S-56 ¹ / ₂ S-56 ¹ / ₂
lewett	120	31x5.2 32x4 32x4 ¹ / ₂	Yes Yes*	Own Cont	23-25 Spec	6-314x5 6-35x434	25.36		C	3*	PC PC	Str Str	A-K Del	Rem Del	D-Lon P-Det	W-G Det	M-Mec M-Thi	1 ₂ Sal 1 ₂ Tim	4.45 4.45		E-T E-T	Hyd* Hyd	Gem Gem	S-54 S-55 ³ / ₄
ordan 'A'' Kissel 55 Kissel '75''	125½ 121 126	32x6.2 32x6.0 33x6.2	Yes	Cont Own Own	Spec 55 "75"	8-3 x4 ³ / ₄ 6-3 ⁵ / ₁₆ x5 ¹ / ₈ 8-3 ³ / ₁₆ x4 ¹ / ₂	28.80 26.34 32.52	L	C C A	5 3 5	PC PS PS	Str Str Seh	Bos Rem Rem	Bos Rem Rem	P-Det P-B&B P-B&B	Det W-G W-G	M-Thi M-Spi M-Spi	1/2 Tim 3/4 Tim 1/2 Tim	4.64 4.45 4.41		E-T E-T I-R	Hyd Hyd Hyd	Gem Jac Ros	S-55 ³ 4 S-56 S-56
Lexington Concord Lexington Minute Man Lincoln 48 Marmon 74 Maxwell 25	119 123 136 142 136	31x5.2 32x6.2 32x5 35x6.7 32x7.3 30x5.2	Yes Yes* Yes Yes Yes	Anst Anst Own Own Own Own	48	6-3 \(\frac{5}{16} \text{ x 4} \) \(2 \) 6-3 \(\frac{5}{16} \text{ x 5} \) \(4 \) 4-3 \(\frac{5}{16} \text{ x 5} \) \(2 \) 6-3 \(\frac{3}{16} \text{ x 5} \) \(2 \) 6-3 \(\frac{3}{16} \text{ x 5} \) \(4 \) 3 \(\frac{5}{16} \text{ x 4} \) \(2 \) 4-3 \(\frac{5}{16} \text{ x 4} \) \(2 \)	26.30 36.45 48.60	I L T I	C A C C A	3 3 5 7 3 3	FP FP PC FP PC	Ray Ray Str Bal Str Str	Con Con Del Del Del Rem	Bos Bos Del Wes Del Rem	D-Lon D-Lon D-Own D-Own D-Own P-Own	W-G W-G Own Own Own	R-Pie R-Pic M-Spi M-Spi M-Spi R-Own	1/2 Sal 3/4 Sal F Tim F Own 3/4 Own 1/2 Own	4.70 5.10 4.68 3.50 4.30 4.60	E-R E-R E-F E-R	E-T E-T I-R I-T I-R E-T	Hyd* Hyd* None Mec Mee* None	Ros Ros Own Own Own Gem	S-56 S-59 S-60 J-50 O-45 S-53
McFarlan SV McFarlan TV Mercer 6	127 140 (115	30x5.7 32x6.2 34x7.2 32x414	Yes Yes	Wis Own Own	TV	6-3 ³ / ₈ x5 6-4 ¹ / ₂ x6 6-3 ³ / ₄ x5	27.34 48.60 33.75	L	C A A	3 4	FP FP PC	Ray Ray Str	Wes Wes Wes	Wes Wes Eis	D-Lon D-M&E D-Own	W-G B-L Own	M-Uni R-Sne M-Spi	½ Tim F Tim ¾ Own	4.90	E-F E-F I-F	E-T E-T E-T	Hyd Hyd Mec	Ros Ros Gem	S-58½ S-64 S-59
Moon Newport Moon Metropolitan Moon London Moon Series A Nash "Advanced"	118 128 113	31x5 .2 31x5 .2 32x6 .2 30x5 .2 33x6 .0	Yes Yes Yes	Cont Cont Cont Cont Own	7U 7C 8R 7Z 161	6-318x414 6-314x412 6-338x412 6-318x414 6-314x5	23 . 44 25 . 35 27 . 34 23 . 44 25 . 35	L L L L	CCCCC	4 4 4 4 3	PC PC PC PC PC	Str Str Str Str Mar	Del Del Del Del Del	Del Del Del Del Del	P-B&B P-B&B P-B&B P-B&B P-B&B	W-G W-G B-L W-G Own	M-Spi M-Spi M Spi M-Spi M-Own	1/2 Tim 1/2 Tim 1/2 Tim 1/2 Tim 1/2 Own	5.10 5.10 5.90 4.70 4.50	E-F E-F E-F B-F	E-T E-T I-R E-T E-T	Hyd Hyd Hyd Hyd Mec	Ros Ros Ros Ros Gem	S-54 S-54 S-543 S-543 S-5612
Nash"Special" Oakland6-54	1121/2	31x5.2 31x4.9	Yes	Own	131 6-54	6-3½x4½ 6-2¾x4¾	19.84	L	C B	3	PC	Mar	Del Rem	Del Rem	P-B&B P-Hoo	Own Mun	M-Own M-Mec	1/2 Own 1/2 Own	4.88 5.10	B-F E-F	E-T	Mec Mec	Gem	S-5376 S-5212
Oldsmobile 39 Overland 91&92 Overland 93 Packard 226&233 Packard 136&143	$100 \\ 112^{3}4 \\ 126 \\ 133$	31x5.2	Yes Yes Yes	Own Own Own Own	30 91 93 6	6-234x434 4-312x4 6-3 x4 6-312x5 8-338x5	18.15 19.60 21.60 29.40 36.45	L L	C A C C	3 3 4 7 9	PC Sp PC FP	Zeu Til Til Own	Del A-L A-L Del	Pel A-L A-L Dyn	P-B&B P-Own D-Own D-Own	Mun Own Own Own	R-The M-Own M-Own M-Mec	1/2 Own 3/4 Own 1/2 Own 1/2 Own 1/2 Own	5.10 4.54 5.11 4.66 4.70	E-R E-R E-R B-F	E-T I-R E-T I-R	None None None Mec	Jac Own Own Own	S-5034 O-25 S-53 S-56 S-56



ASK a service man how many Bock Bearings, if any, he has ever seen that have failed or worn out.

Then remember that Bock Bearings have been standard equipment in more than 100 makes of cars and trucks during the past ten years, at one or more points of hard service.

The patented design of the round

head roller has always given Bock an advantage in the elimination of friction.

Recent refinements and improvements in manufacture have resulted in a tapered roller bearing that is without a peer.

The new type Bock Bearings have made a record of successful performance that is absolutely unique in automotive history.

THE BOCK BEARING COMPANY, Toledo, Ohio

BOCK Quality TAPER ROLLER BEARINGS

Current Passenger Car Specifications

(This list comprises cars distributed on a national basis)

		TIF	RES				ENGIN	E						trical	Clutch	Gear-	Uni- versal Joints	REAR /	XLE	E	BRAKES		Steer- ing Gear	Rear Springs
MAKE AND MODEL	Wheelbase (Ins.)	Standard Size (Ins.)‡	Balloon Equipment	Make	Model	Number of Cylin- ders, Bore and Stroke (Ins.)	Rated Horsepower, N.A.C.C.	Valve Arrangement	Piston Material	Number of Main Crankshaft Bearings	Oiling System	Carburetor Make	Ignition System Make	Generator and Starter Make	Type and Make	Make	Type and Make	Type and Make	Gear Ratio‡	Foot, Type and Location	Hand, Type and Location	Four-Wheel Brake, Type	Make	Type and Length
Paige	128	33x6.7 33x6.0 33x6.6 33x5	Yes	Cont Own Own Own	67	6-3 ³ / ₄ x5 6-3 ¹ / ₂ x5 8-3 ¹ / ₄ x5 6-4 x5 ¹ / ₂	33.75 29.40 33.80 38.40	L L L T	CCCC	4 7 3 7	PC PC PC FP	Joh Joh Str Own	A-K Del Del Del	Rem Del Del Del	D-Lon D-Own C-Own D-Own	W-G Own Own Own	M-Mec M-Spi M-Spi (M-Spi	1/2 Sal 3/4 Tim 3/4 Tim 1/2 Own	4.90 4.63 4.90 4.29	E-R E-F E-R E-R	E-T I-R I-R I-R	Hyd* Hyd Hyd Mec*	Gem Gem Gem Own	S-61 ³ / ₄ S-54 S-60 S-64 ¹ / ₄
Pierce-Arrow"80" Reo	130	32x5.7 32x6.2		Own Own		6-3½x5 6-3½x5	29.40 24.34	L G	C A	7	FP PS	Own Sch	Del NE	Del . NE	P-B&B D-Own	B-L Own	\R-Goo M-Spi \M-Own	½ Tim		I-F E-R	I-R I-R	Mec None	Gem Own	S-56½ S-54¼
Revere	131 131 117 121½	32x4½ 32x6.2 31x5.2 32x5.7 32x4½	Yes* Yes Yes* Yes*	Mons. Cont Own Own Cont	"M" 6-J D A	4-48/8x6 6-33/4x5 6-31/4x43/4 8-3 x43/4 6-31/4x51/4	30.63 33.75 25.35 28.60 29.40	H	A C C C C	2 4 7 9 3	PC PC PC PC PS	Str Sch Str Zen Str	Bos Bos Bos Del Spl	Wes Wes Bos Bos Wes	D-B-L D-Ful D-Own D-Own P-B&B	B-L Ful W-G W-G Ful	R-Own M-Spi M-Spi M-Mec M-Mec R-M&E	1/2 Own 3/4 Col 1/4 Col 1/2 Col 3/4 Tim	3.44 3.75 4.63 5.10	I-R I-F I-F I-F E-R	E-R E-T E-T E-T I-R	Mec Mec Mec Mec*	Gem Gem Gem Gem Jac	551/4 S-561/4 S-561/2 S-57 S-59 V-553/4
Roamer	128 112	32x4½ 31x5.2 33x5	No Yes No	Own Own	G1 G 40	4-41/4x6 4-31/4x41/2 6-41/2x43/4	28.90 16.90 48.60	H L L	A A A	3 4 7	FP PC FP	Str Til Own	Bos Con Bos	Wes Dyn Wes	D-B-L P-B&B K-Own	B-L Mun Own	R-M&E R-Own M-Own	34 Tim 12 Sal F Own	5.10	E-R I-F I-R	I-R I-F I-R	Mec* Mec None	Jac Ros Own	V-55% O-46 V-54%
Stanley. 252 Star 4 Stearns Knight 4 Stearns-Knight B Stearns-Knight S Sterling-Knight S Sterling-Knight G Studebaker Sta Six	102 121 119 130	31x4.9 30x31/2 33x6 33x41/2 33x6.6 32x41/2 33x5 31x5.2	Yes* Yes* Yes Yes* Yes* Yes*	Own Cont Own Own Own Own Own Own	1	2-4 x5 4-31/6x41/4 6-31/4x5 4-33/4x55/6 6-31/2x5 6-31/4x45/6 6-4/4x51/2 6-33/6x41/2	20.00 15.63 25.35 22.50 29.40 25.35 47.25 27.34	X X L L	C C A A C C C C	2 3 4 3 4 7 4 4	Sp PK PC PC PC PC FP PS PC	Non Til Joh Sch Joh Str Str Str	Non A-L DeJ A-K DeJ Wes Bos {Wag Rem	Bos A-L DeJ A-L DeJ Wes Bos {Wag Rem	Non P-Own D-M&E D-Own D-M&E D-Ful D-B-L P-Own	Non Own Own Own Own Ful B-L Own	R-The M-Spi R-Cli R-Cli R-Cli R-Cli R-The	1/2 Own 3/4 Own 1/2 Eat 1/2 Own 1/2 Own 1/2 Tim 1/2 Own 1/2 Own	4.87 5.30 4.50 4.90 5.10 3.76 4.18	E-F E-R E-R E-R E-R E-R E-R	I-R I-R I-R I-R I-R I-R I-R E-T	Hyd Mee* Hyd* Hyd* Hyd Hyd* None Hyd*	Ros Own Ros Own Ros Ros Ros Own	S-58 S-49½ V-50 V-50 V-50 S-58 J-59½ S-50½
StudebakerSpec. Six StudebakerBig Six		32x6.2 34x7.3		Own Own	EQ EP	6-3½x5 6-378x5	29.40 36.04		C	4	PC PC	Str Bal	Rem Wag Rem	Rem Wag Rem	P-Own P-Own	Own Own	M-Spi M-Spi	1/2 Own	4.36 3.69	E-R E-R	E-T	Hyd* Hyd*	Own Own	S-56 S-56
Stutz	130	32x6.2 32x6.7	Yes	Own Own	691 691 50	6-3½x5 6-3½x5 6-3½x4½	29.40 29.40 24.38		BBC	3 3 4	PC PC	Str Str	Rem Rem Wes	Rem Rem Wes	P-B&B P-B&B	W-G W-G Mun	M-Mec M-Mec M-Uni	34 Tim 34 Tim 14 Own	4.90	E-F E-R	E-T _e I-R E-T	Hyd Hyd Hyd	Gem Gem Ros	S-62 S-62 S-55
Westcott	120 118	32x6.2 32x6.2 32x6.2	Yes Yes	Cont Cont Own	8R 8R ABC .	6-3 ³ / ₈ x4 ¹ / ₂ 6-3 ³ / ₈ x4 ¹ / ₂ 8-3 ¹ / ₄ x4	27.34 27.34 33.80	L	CCC	4 4 3	PC PC FP	Str Str Str {Zen Sch	Del Del Del	Del Del Del	P-B&B P-M&E P-Own	W-G W-G Own	M-Cle M-Cle M-Spi	1/2 Col 1/2 Col 1/2 Eat	4.90 4.63 4.90	E-R E-R {E-R {E-F	E-T E-T (I-R E-T	Hyd* Hyd* {None Hyd	Gem Gem Own	S-571/2 S-56 (S-541/2 S-58
Wills Ste. Claire "W-6" Willys Knight65 & 67 Willys-Knight "66"	127 118 124 126	33x6.0 33x1.9 33x5.7 32x6.2	Yes	Own Own	"W-6" 65 "66"	6-31/4x51/2 1-35/8x41/2 6-31/4x43/4	25.35 21.03 25.35		A A	7 3 7	PC PS PC	Seh Til Til	Del A-L A-L	Del A-L A-L	P-Own D-Own D-Own	Own Own	M-Spi R-Own M-Mec	34-Eat 34 Own 1/2 Own	1.90 {4.44 \5.12 5.11	E-F E-R B-F	É-T I-R E-R	Hyd None Mec	Own Own	S-58 S-55 S-571/6
								1	Γ	A Z	X]	C	AE	S									3	
CheckerE		33x4½		Buda	WTU	4-33/4x51/8 4-25/8x41/2			C	3	PC PS	Zen Zen	Bos Bos	Bos	D-Ful D-Ful	Ful Ful	Blo Spi	34 Col 34 Own	5.12 4.74	E-R E-R	I-R I-R	None None	Gem	S-57% S-
H.C.S. ELuxor "Luxor"	110 112 118	29x41/3 32x4 33x41/3	No	Wauk Lyco Buda	Z CH WTU	4-31/4×41/2 4-x31/4 5 4-33/4×51/2	16.90 19.60	L	I A	3 5	FP PC	Zen Zen Zen	Bos Bos Bos	Bos Bos Bos	P-B&B P-B&B D-Ful	W-M Ful	M-Mec M-Spi M-Spi	34 Own 34 Sal 12-Col	5.10	I-R E-R E-R	E-T I-R E-T	None None	Ros	S- S-55
Pennant		33x4 ¹ / ₃ 30x5	No Yes*	Buda Buda Buda	WTU WTU	4-3 ³ / ₄ x5 ¹ / ₈ 4-3 ³ / ₄ x5 ¹ / ₈ 4-3 ³ / ₄ x5 ¹ / ₈	22.50	L	B B C	3 3 3	PC PC	Zen Zen Zen	Bos Bos	Wes Bos Dyn†	D-Ful P-B&B D-Dtl	Ful Mun Det	Blo Pic Spi	34 Col 34 Col 1/2 Sta Own	4.87 4.70 5.10	E-R I-F	I-R E-T	None Mec	Gem	S-57 S-5914
Rauch & LangT Rauch & Lang**. Reo	113	33x41/ 32x41/ 32x4	No	Own Own Buda	T-6 WTU	Electric 6-3 3 x 5 x 5 4-3 3 4 x 5 1/8	24.30	G	A B	4	PS PC	Sch Zen	N-E Eis	N-E Eis	None D-Own D-Dtl	None Own W-M	Own Own Spi	Own 1/2 Own Col	8.60 4.70		I-R I-R	None None None	Own Gem	S-54 S-54
Willys KnightA.B.C. Yellow	109	32x4½ 32x4½ 29x4½	No	Own Cont	64 V7 V7	4-35/8x41/2 4-33/4x5	21.03 22.50	L	CCC	3 3	PS Sp Sp	Til Zen	A-L Bos	A-L N-E† N-E†	D-Own D-B-L D-B-L	Own B-L B-L	Own Spi Spi	34 Own 34 Tim 34 Tim	5.12 4.90 4.89	E-R E-R E-R	I-R E-T E-T	None None	Own Gem	S-55 56 ³ 4 56 ³ 4
ABBREVIATION **—Electric Generator only *—At extra cost	is— lels			Del- Det- De J Dit- Dues- Dur- Dyn- E-F- E-R- E-R- F nll- Ful- ½F- ½F- G-D- G-L-	Delco Detro De lo	it Jon Jon Ler Jon Ler Senberg ton to to ton to to ton to	o all l	is is an obear-		H—H—Har-Hol-Har-Hol-Har-Hol-Har-Har-Har-Har-Har-Har-Har-Har-Har-Har	Horizz Harizz Harizz Harizz Harizz Harizz Harizz Harizz Harizz Jan Jol Karizz Harizz La Lo La Lo La Lo La	osier ersche drauli dd ernal ernal Quarte ox con unson des ungston des ece-Ne ycomi	ville ng hant &	lman Wheels	N-No No No O-D O-D PC Pet Pet Ptc PK Ps- R- R- Re Ro Ro S- Scl	Platform—Norm—Norm—Norm—Norm—Speciand com—Press and com—Press necting Bearin—Splas—Quarte—Fabricy—Ram—Re	rm ie to the East thway Type ional Plate sure to connectin field rs is re fo, Rods, gs in and Fr if Ellipt yfield stream Strea	all Crarg rod be	okshaft earings	Si S	ne—Sp D—Cir De—Si Di—Si Di—Ci Di—V—G—V—W—W—W—W—W—W—W—W—W—W—W—W—W—W—W—W—W	culatin pecial picer plitdorf standard andard ewart rrling romber ead liotson limken niversa tilever Warnee Warnee Warnee Westin Westin Westin ye ve	d Equ	nipment e Shaft

ABBREVIATIONS-



Plan Now

for Bigger Tourist Business

Stock items tourists need and suggest necessary accessories to every customer—you can double sales.

This year make a conscious effort to get a bigger tourist business, and let WEED help you do it. Stock the items you know tourists need. Display the

accessories you know tourists need and suggest them every time a customer enters your store. Have a TOURIST'S DEPARTMENT if you have room for it.

You can Double your Tourist Business by this simple plan

Let WEED Products, WEED National Advertising WEED Display Material Help You— Note Following Pages



WEED CHAINS

The Most Profitable of all Accessories

6 WEED PRODUCTS

and WEED Advertising and Display Material which will help you get tourist business

WEED Chains—a tourist necessity—the most profitable item in the whole accessory field for thousands of dealers—let WEED Chains lead in getting tourist business this year.

WEED Advertising in national publications will help you right through the touring season.

WEED Display material for your windows and counters will be furnished you FREE. All you need to do is to stock WEED Chains, display them, suggest them.

Cu

Ma

Fill out your stock of WEED Chains today—and ask your jobber for Tourist Display Material shown here.



For Your Windows and Counter

Get the FREE Metal Display Rack for WEED Chains, now. Get the big window streamer that invites customers in for touring equipment. Ask your jobber's salesman—or write direct.

WEED CHAINS

The most profitable of all accessories

AMERICAN CHAIN COMPANY, Inc.

Bridgeport, - Connecticut

In Canada: DOMINION CHAIN COMPANY, LTD., Niagara Falls, Ontario District Sales Offices: Boston, Chicago, New York, Philadelphia, Pittsburgh, San Francisco

This attractive streamer FREE for your windows!



ALL TOURISTS NEED

Cut this advertisement out of The Saturday Evening Post of May 16 and paste in your window



"After my 3,600 mile tour last August I'd no more think of starting out without WEED chains

"There was the detour in the sterm just west of Dayton—the descent of the famous long hill west of Wheeling in a blinding rain—the slippery brick roads between Wheeling and Pittsburgh.

"And I used them again on the wet, high crowned macadam roads in the Pennsylvania mountains They brought me out of the sand between Atlantic City and New York. They made going possible



"I was on good roads most of the time—but I needed choins just the same. Believe me it's a comfortable feeling to have them on—to know you can take it easy and make good time without straining to prevent accidents."

--- Mr. Frank Fulton, 843 Gait Ave., Chicago The manufactures to been for MEED Chairs for many or are And safe from a base of space MEED Cross Chronic Airs deploy will be gird for their part for Terran Control of Airs of the Airs of the Part can reflectly ferman MEED Chairs by their control place?

AMERICAN CHAIN COMPANY, Inc.
BRIDGEPORT, CONNECTICLY
DOSMINOS MAINCO 244. Change Books Suprascis



WEED CHAINS

"You can put them on in a moment"



Look for this display in your dealer's store—get a sourist's outfit—chains, extra cross chains and pliers—have it when you need it!

The above advertisement is the first of a series which will appear in The Saturday Evening Post this summer.

PUT THESE ITEMS

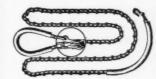
in your Tourists
Department

Weed Chain-Jack

Easiest to operate. Extension handle, chain operation, no dirty clothes or barked knuckles.



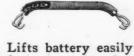
American Towing Chains



Have all chain's advantages. No coiling, simply drop into tool box. Five sizes and styles.

Acco Battery Carrier





from any location in car. Strong chain, galvanized hooks. Covered with heavy cord shield.

American Tire Lock Chains

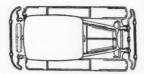
High quality steel links — real protection from tire thieves.



Campbell Cotter Pins

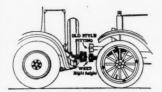


The Hammer-Lock Self-Spreading pins. Special kits of assorted sizes for car owners. Also Garage Assortments for repair men. Ask your jobber's Salesman.



The outward curve of Weed Bars gives added shock-space and allows room for spares. Yet the curved ends sweep inward for good appearance and to prevent interference in driving





Api

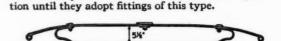
Weed Right-Height Fittings place all bars "at the bumper line" so they meet other bumpers. This is true even on higher frame cars, such as the Ford.

Beauty!

WEEDS have it! plus 6 other selling points

The illustration above is an unretouched photograph of a WEED Sentry Three-Bar on a well-known car.

The other WEED models are just as distinctive on the cars for which they are made—and beauty is only one of the many points that sell Weed Bumpers for Weed Dealers.



correct bumper line. Cars can never have real protec-

WEEDS have real "shock-space." Look at the depth between front and rear bars—the long outward sweep of the front bars with ends curved in to prevent hooking.



There's correct design. Weed front and rear bars are of correct length—proper curvature—both for appearance and protection.

They are compact with the car for close work and ease in parking.

WEEDS are correct height. Even on light cars, WEED Right-Height Fittings place bars at the



WEED Rear Bars allow ample space for spares. Note WEED Sentry Model B shown here.

And last, but not least, WEED Fittings are strong, simple, easily applied and THEY HOLD.

Ask your jobber to send you the front and rear bars complete with fittings for the type of car in which you are particularly interested. Install them. You'll sell WEEDS from then on. Try it.



BRIDGEPORT, CONNECTICUT

In Canada: DOMINION CHAIN COMPANY, Limited, Niagara Falls, Ontario District Sales Offices: Boston Chicago New York Philadelphia Pittsburgh San Francisco

WEED BUMPERS

Sensible Protection Fore and Aft



What AC Means to the Dealer

AC Spark Plugs



More than 80% of all the cars produced in this country, Fords excluded, are factory equipped with AC Spark Plugs. Among these cars are:

Apperson Buick Cadillac Case Chandler

Dodge Brothers Brothers
Durant
Essex
Flint
Hudson
Hupmobile
Kissel
Marmon

Maxwell
Nash
Oakland
Oldsmobile
Paige
Star
Westcott
Wills Sainte
Claire

AC 1075 for Fords



One glance tells the whole story — Why the AC 1075 is an especially good plug for Fords—Here are its features:

- Spring Terminal Clip
- ² Heavy Body Porcelain
- High Temperature Fins-Patented Carbon-proof Porcelain
- Heavy Electrode Forms Natural Oil Drain.

Dealers who carry a good stock of AC products can build a profitable business. The demand is assured because of their use as car equipment.

Backed by strong advertising.

They afford you the margin of profit you should get.

AC Spark Plug Company, FLINT, Michigan

AC-SPHINX ENGLAND

Levallois-Perret FRANCE

AC Speedometers



That AC Speedometers can be depended upon for trouble-free operation, is evidenced by the fact that they are original equip-ment on such cars as Buick, Chevrolet, Chrysler, Gray, Maxwell, Oakland, Olds-mobile and GMC Trucks.

The Model for Fords

Miles per hour, miles per trip, total mileage-it tells them all.

Simple direct drive is a big improvement over previous types of drives as it does away with the swivel joint.

Complete with all attachments and once installed is a source of constant satisfaction. The cost is surprisingly low-\$15. (\$21.00 in Canada.)

AC Air Cleaners



Once installed it requires no attention, having no moving parts to get out of order, and its high permanent cleaning efficiency keeps down repair bills.

Comes complete with all attachments and is reasonably priced—\$5.00 to \$7.00 (\$7.00 to \$10.00 in Canada) depending on the size required.



One of the thousands of homes of the Stewart-Warner family. Bright spots of success.

This already famous family will be made still more famous this year by the largest advertising campaign in the accessory field.

Slewart l Access



You are Invited to Put Your Selling Problems Up to Our Dealers' Information Bureau



Stewart-Warner Electric
Motor Horn—\$5
West of 100° Meridian \$5.25



Stewart-Warner Double and Triple Bar Bumpers

Black Enameled or Nickel Plated Bars Prices range from \$12.50 to \$37.50 Slight increase in Western Prices

Putting the Dealer on Easy Street

HY is one dealer successful while others drag along and drop out? This question has been answered by our Dealer Information Bureau, and a sincere effort to better the dealer's business is found in our recently announced "Plan of Helpfulness."

The successful dealer has the knack or better judgment in selecting goods that have a demand already created for them. The dealer cannot hope to take unknown goods and force a demand.

The car owners and new car buyers are thoroughly posted on what's what.

So, while the unsuccessful dealer is waiting for customers or trying to force unknown products, the successful dealer is making sales.

The quickest way to change from doubtful business to profitable business is to display the Stewart-Warner family of Accessories.

Stewart-Warner is known. It has the favorable impressions of perfect service given

by the Stewart-Warner Speedometer and Vacuum Tank on millions of cars.

Each one of these Stewart-Warner Accessories is the result of a set standard of the best in materials, workmanship and design. A perfectly matched family—an advantage to the car owner in unified equipment and one name to look to for service.

The car dealer or accessory dealer who displays Stewart-Warner Accessories has a tremendous advantage over the other dealer who scatters his buying, servicing and selling energies over a motley collection of products.

One place to look to for new stock—on Ten Products—the Stewart-Warner Service Stations near you. These Stations are centrally located in 62 cities across the nation—each within a few hours delivery time of the extreme limits of its territory.

It's up to the dealer where he will stay on Dud Street or turn into Easy Street with Stewart-Warner.

STEWART-WARNER SPEEDOMETER CORPORATION CHICAGO . U. S. A.

No matter where you are located, no matter what business problem is bothering you—turnover, stock, display, buying, merchandising, advertising—write to the Stewart-Warner Dealer Information Bureau, 1826 Diversey Boulevard, Chicago, Ill., or take it up with the Stewart-Warner man who calls on you.



Stewart-Warner
Electric Windshield
Cleaner
Complete . \$8.50
West of 100° Meridian

Warner sories



Stewart Fender Guards
Black-enameled bars, per pair, \$23,00
West of 100° Meridian, \$26.00
Nickel-plated bars, per pair, \$25.00
West of 100° Meridian \$28.00



Stewart-Warner Rear Vision Mirror For Open or Closed Cars, \$2.00



Stewart-Warner Miniature Spotlight Prices range from \$9,00 to \$12.50



Stewart-Warner Shock Absorbers
Per Pair \$15.00
West of 100° Meridian \$15.50
Special Model for Fords \$11.50
West of 100° Meridian \$12.00

Ready Sellers and Satisfactory Performers

You know the dependability of Farran-oid Fan Belts—that quality which has proved dependable in usage for the motorist, and in sales for you. The same recognized leadership that Farran-oid Fan Belts enjoy is manifest in all Farran-oid Products.

These have all gained the distinction of the Farranoid name, only by successfully meeting the most rigid test,—tests of highest quality and easiest salability. Leading jobbers are prepared to supply your requirements on all Farran-oid products.

Farran-oid Radiator Hose
Farran-oid Garage Air Hose
Farran-oid Blowout Patches
Farran-oid Door Checks
Farran-oid Car Washing Hose
Farran-oid Tire Flaps
Farran-oid Ford Floor Mats
Farran-oid Tube Patches

THE FARRAN-OID COMPANY, Akron, Ohio



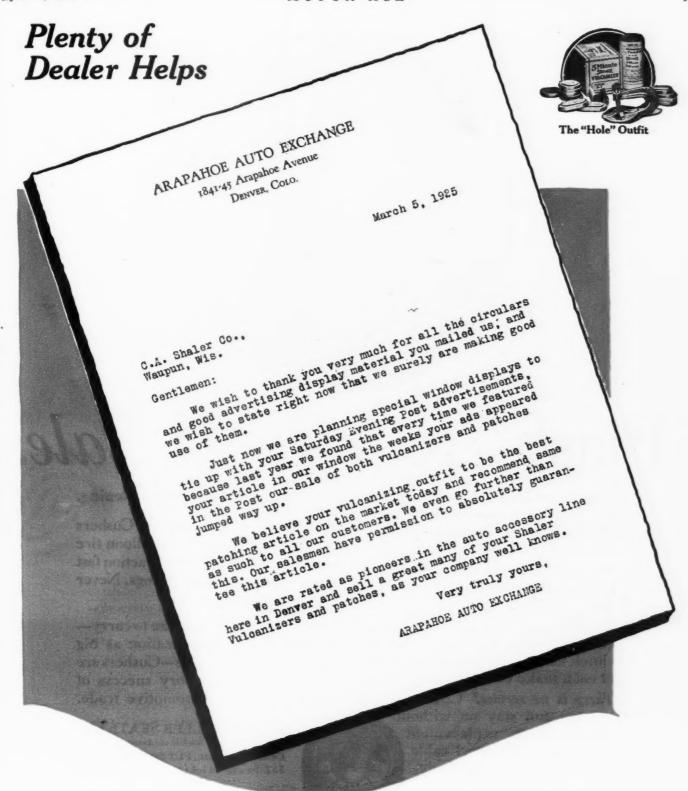




You can't tell when you'll need it VULCANIZER

SATURDAY EVENING POST THE

You know how continuous advertising like this has helped to sell the Shaler 5-Minute Vulcanizer to nearly three million motorists—and create a permanent repeat business on Shaler Patch-&-Heat Units. So we are advertising to motorists more this year than ever before—full pages and quarter pages, clear into fall. The opposite page tells how one dealer takes advantage of our advertising.



We want to Help you sell more, too

Most of your customers are reading our advertisements in The Saturday Evening Post, Popular Science Monthly, other national magazines and farm papers. Get the benefit of this advertising. Display the Shaler in your window to tell your customers, and other motorists as well, that you can supply them. It will bring you many new customers and increase your profits.

Write Now for Free Window Display Material

C. A. SHALER CO., 205 Fourth St., Waupun, Wis. Branch Factories: Beeston, England, and Montreal, Canada

Ap



"Flash Action" - in Sales

From introduction to general acceptance in just a few months! Never has there been an accessory success like Cushers.

The public wants Cushers for easy riding. The trade wants Cushers for easy handling.

There is just one size to equip all cars perfectly. Cushers automatic clutch design makes Cushers action fit each make of car exactly.

There is no service! Cushers go on quickly and stay on without readjustment, replacement or repairs. The steel cable guards against stretching,

breaking, chafing and loosening.

And there is no compromise. Cushers never were anything but balloon tire controls. It makes Cushers action fast enough for any tires or springs. Never is riding stiffened.

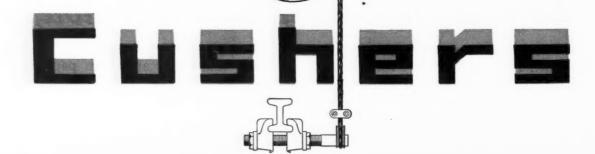
"Flash Action"—one size to carry—no service—an organization as big as Cushers possibilities—Cushers are piling up the accessory success of the year for the automotive trade.

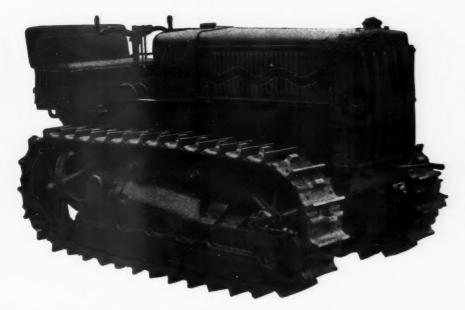
CHICAGO ROLLER SKATE CO.

Manufacturers of Screw Machine and Automotive Products

Cushers Sales Dept., FULTON-DEAN CO.

332 South Michigan Ave., Chicago





Good Insurance Against Slow Sales

We have a proposition that will help you insure your business against slow sales. We know how good it is because it has been thoroughly tested by wide-awake automobile dealers. It is a good plan—business-like, profitable.

Sell "Caterpillar" Tractors

Consider the Caterpillar market—practically every enterprise calling for power plus traction is a present or potential user of "Caterpillar" power; states, counties, townships, municipalities; contractors, engineering projects, public utilities; lumber, oil, and mining operations; farms and industrial plants. There's practically no limit to the "Caterpillar's" tremendous versatility and wide usefulness.

The "Caterpillar's" market is growing rapidly; and it is steady, all year 'round.

You don't require extra equipment or any additional investment, in order to make profitable sales to "Caterpillar" users in your territory.

We would like to describe our plan to a few automobile dealers with substantial going businesses. Write us for further facts. You'll be interested.

THE HOLT MANUFACTURING CO., Inc.

PEORIA, ILL.

STOCKTON, CALIF.

Export Division: 250 W. 54th St., NEW YORK



310%

The week ending March 28 was the greatest week, except one, in Kissel's 19 years' history. Actual sales for this week showed an increase of 405% over the same week of last year.

Kissel sales for March increased 310% over March of last year which was a good month. These facts are all the more remarkable when you realize that the entire automobile industry showed a decrease in production for

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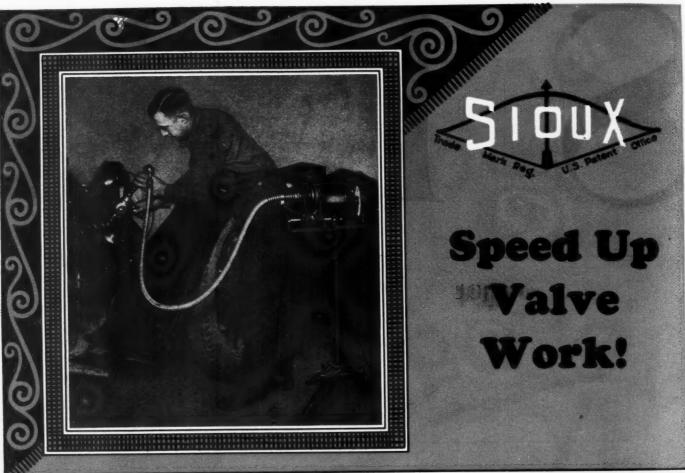


Increase for March

March compared with the same period in 1924.

Nothing but the outstanding values of the new Kissel Sixes and Eights and the strong and unique position of Kissel in the industry could be responsible for such a phenomenal record. And mind you: This business has come to Kissel without the aid of a single district man.

THE KISSEL MOTOR CAR COMPANY, Hartford, Wis.



SIOUX VALVE GRINDING ATTACHMENT

For Lapping Valves

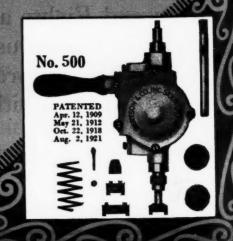
Is your shop losing time and money by out-of-date methods for grinding valves? You can lap in any valve quickly and accurately with the Sioux Valve Grinding Attachment. In the average shop it saves hundreds of dollars in one season.

It laps the smallest or largest valve accurately. It gears down and transforms direct forward motion into a reciprocating or back and forth motion, as in the Sioux hand operated valve grinder. Gives you complete equipment for power valve-lapping service. Used with the Sioux Flexible shaft or any small portable drill.

Your Jobber Sells It

ALBERTSON & CO., SIOUX CITY, IOWA







MCKAYBEADBUMPERS

Makers of McKay Tire Chains, McKay Shurout Chains, McKay Ready Repair Links, McKay Bumpers and Chains for all industrial and commercial purposes.

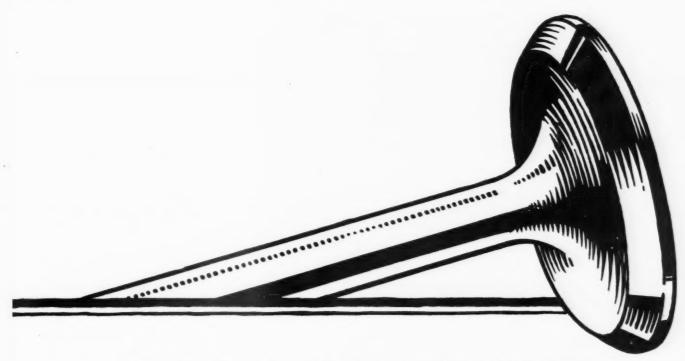
Valve "doctors" get small thanks—and smaller profits!

Doctoring up an old, burned, worn out valve pays you no dividends. It isn't the kind of job you can talk about—and selling is the thing that builds up a service garage business nowadays.

Sell your customer Thompson Silcrome Valves and tell him he's through with the valve-grinding—and a lot of the carbon nuisance—for another ten to twenty thousand miles, and he'll be glad to pay for that kind of service.

What he's after is power that lasts—and when he finds he has it—you've made another booster for you.





But tell him the why and wherefore. Tell him Thompson Silcrome Valves don't burn, pit, scale or warp in the hottest engine, that no others can compare with them in the severest test of airplane service. And if he doesn't know that the valve is the heart of the motor, tell him. He wants just that sort of information.

Thompson Silcrome Valves are supplied by leading jobbers and parts distributors for all makes of motor cars and trucks.

Order them by name.

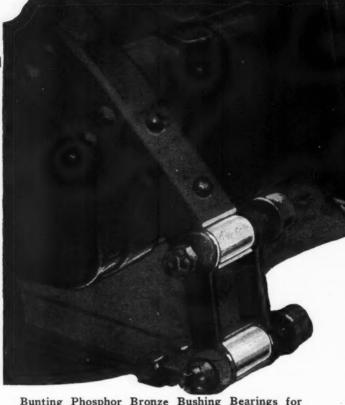


THOMPSON PRODUCTS, INC., CLEVELAND

Also Manufacturers of King Bolts, Tie-Rod Bolts, Spring Bolts, Bushings, Tappets and Starting Cranks

EXPORT DEPARTMENT: 130 West 42d St., New York, U. S. A. CABLE ADDRESS: "THOMPRO—NEW YORK"

Silcrome Valves



Bunting Phosphor Bronze Bushing Bearings for replacement in all automotive vehicles are shown on Piston Pin Bushing List No. 18; Spring Eye and Shackle Bolt Bushing List No. 111; Steering Knuckle and Tie Rod Bushing List No. 415. Available from your jobber or sent on request.

Spring Bushing Business

In the Spring the spring bolt rattle makes more noise than at any other time in all the year. A quiet car is the first requisite of the motorist in the touring months. Rock that rattle to sleep with a new set of genuine Bunting Phosphor Bronze Bushing Bearings.

THE BUNTING BRASS & BRONZE CO.

TOLEDO, OHIO

BRANCHES AND WAREHOUSES AT CLEVELAND CHICAGO

710 St. Clair Ave., N.E. 2015 S. Michigan Ave., Calumet 6850-6851

BOSTON

CAGO SAN FRANCISCO ichigan Ave., 198 Second St. 6850-6851 Douglas 6245

PHILADELPHIA 1330 Arch St. Spruce 5296

NEW YORK

245 West 54th St.

Columbus 7528



"In the Spring say it with Bunting Bushings."

BUNTING

PHOSPHOR BRONZE

BUSHING BEARINGS



enters its second successful year with

A REMARKABLE GUARANTEE

Boyce-ite was the sensation of 1924. Twenty million cans of this famous gasoline improver were sold. As a result of records now before us, backed by laboratory research, we are prepared to offer the following astounding guarantee—

EGARDLESS of the mechanical condition or design of your motor, or the grade of gasoline or oil used, if after adopting Boyce-ite treated gasoline as your standard motor fuel you ever again find it necessary to remove carbon, have that carbon burned out and send us the bill! A check will be sent you immediately.

OW, we stand back of this guarantee in any way you choose to interpret it. We know there will be many cars which, because of mechanical defects or conditions such as carburetor adjustments, or hard carbon deposits already formed, will be unfavorable to Boyce-ite, because

Boyce-ite never has been, nor ever will be a "cure-all."

We know too that the mechanic who loves to gouge out hard carbon from the delicate parts of a motor will not be enthusiastic over this Boyce-ite guarantee, but you, who have the car-owner's interest at heart, will welcome it.

We know also, some unscrupulous persons will impose upon us under the terms of such a broad guarantee, but—that guarantee stands. Stop and think what this Boyce-ite guarantee means!

You are no longer selling a product called Boyce-ite, you are selling a service called Boyce-ite—a service that once and for all relieves the motorist of the thousand and one troubles caused by present day gasoline.

This guarantee ends all arguments about the merits of Boyce-ite.

Now, there is a reason for this Boyce-ite guarantee—experience has shown us that the average motorist is not interested in any statements regarding Boyce-ite by scientific authorities, no matter how favorable they may be.

The average motorist is not greatly excited over the fact that we have one of the most completely equipped laboratories in the country for the testing of non-carbon-forming motor fuels.

The average motorist is not interested in the fact that we have spent a fortune in the continual improvement of Boyce-ite, or, that Boyce-ite is far more powerful in action than it was a few months ago.



ERE'S what the average motorist is interested in—"Will my motor operate more satisfactorily, more economically and over a longer period of time, with fewer trips to the repair shop, when Boyce-ite treated gasoline is used, than with any other motor fuel I can buy?"

The Boyce-ite guarantee is the complete answer to that question and will be broadcast to the entire motoring public in big space advertisements.

It will be the sensation of the year.

The car owner from now on who adopts Boyce-ite treated gasoline as his standard motor fuel, will not only be relieved of all carbon expense, but will in addition receive the following benefits—quick start; faster pick-up; more miles per gallon, and smoother operation.

Under this unqualified Boyce-ite guarantee, which you are now at liberty to use, all arguments about Boyce-ite are forever swept aside.

Boyce-ite makes good in every car, or we will.

Now, let me make a suggestion:

Last year, at the height of the season, the demand for Boyceite outstripped production. In spite of greatly increased factory facilities, it is probable that the shortage this year will be far greater, owing to this remarkable guarantee.

The time for you to stock Boyce-ite is NOW.

Manism Joyes
President.

BOYCE & VEEDER COMPANY, Inc. Long Island City, N.Y., U.S.A.



BOYCE-ITE although only now entering its second year, has attained world-wide distribution. To reach the vast car-owning public who can be served by this distribution Boyce-ite will be advertised in the great magazines of national circulation.

Dominating space will be used in such magazines as the Saturday Evening Post, Collier's, Cosmopolitan, the American, and Liberty. Painted displays on the main highways will also be used. Millions of car owners will be influenced by this advertising and you will reap the benefit.

By manufacturing a product of the proven merit of Boyce-ite; by inaugurating this inviolable guarantee that takes all responsibility from your shoulders and by giving this guarantee the widest publicity, we have done our part. The rest of the job of making satisfied car-owners and building a profitable business for yourself is up to you.

And it's as simple as ABC. Preach the constant use of Boyce-ite. Say to your customers "Use Boyce-ite with every gallon of gasoline you purchase or don't use it at all. Its remarkable effect on motor performance



comes with continuous use." Boyceite Jerry says, and he's right, that
you can't cure consumption with
one glass of milk, nor can you use
Boyce-ite occasionally and expect
results. Boyce-ite is not a cure-all,
but the best motor fuel you can
use in your car—bar none.

If your customers do use it regularly, they'll come back to you in a short time and brag about what a wonderful motor they have. If they try a couple of cans, of course, they'll probably get no noticeable results. Constant use

means permanent satisfaction.

Now let us repeat: The time for you to stock Boyce ite is not next week, not next month—but TODAY!

Joy President

BOYCE & VEEDER CO., INC., LONG ISLAND CITY, N. Y., U. S. A.

SALES COST CUT 50% BY TELEPHONE



A HUSTLING fruit and produce house of Atlanta found selling cost too high—and they found the remedy. They needed more frequent visits with their customers, and got them. They wanted to cover a bigger territory, and did so. With seventy-five long distance telephone solicitations a day to customers and prospects, a 1600% increase in telephoning, they rapidly extended

distribution, increased business, and slashed sales cost in half.

The long distance telephone is making similar records today for thousands of concerns in hundreds of lines of business. Salesmen are covering bigger territories by telephoning to customers they otherwise could not reach. Long trips are saved, appointments and solicitations made, and goods sold by telephone. Customers are pleased. They place their orders more quickly and are assured of quicker delivery. The telephone is a great factor in buying, as in selling, and it is a powerful tool in collections. It is saving millions of dollars annually for American business men.

Are you using the economy of the telephone in your business as you should? Are your present telephone facilities adequate, or properly arranged and distributed? Are you using an outgrown operating system, and are your employees trained in telephone use? The telephone question is the important one today, in any business institution.

Your concern, by calling the local Bell company, can have the Commercial Department make a study of the telephone in your business. In the meantime don't wait but save by long distance. The telephone on your desk connects with the man or concern a thousand miles away just as it does with the office in the next block. Day or night—now—it is ready to put you in communication with the man you want. Number, please?

BELL LONG DISTANCE SERVICE



Apri



BE

THE DEFINITE CONFIDENCE-of motorists, dealers and jobbers in Rie Nie Fan Belts and other Rie Nie Products is a tribute to the satisfactory service rendered by each one.

The confidence of the motorists in a Rie Nie Fan Belt is shown readily by the instant acceptance of this belt by him. He appreciates, and knows from experience, that it delivers a service that only a Rie Nie Product can de-

The dealer and the jobber know that a Rie Nie Fan Belt renders more service and wear because it is constructed of materials tested minutely and scientifically for durability and flexibility; that these belts are oil, heat and waterproof; that their grip never slips.

Rie Nie Fan Belts sell—and sell rapidly, for they enjoy and merit the confidence of the motorist, dealer and jobber. Their construction insures genuine service. jobber. Their construction insures for Their reasonable price insures quick sales. Their repu-

Carry A Spare!

FLAT TYPE

Is made for Regular or Crowned Pulleys, and fit exactly the car for which it is made. Ply upon ply of gum-dipped fabric (cut on the bias for greater strength) wrapped securely and then vulcanized in a special cover jacket to eliminate "ply" separation.

VEE ROUND

Type is made for Grooved Pulleys and fit any such pulley snugly and tightly, wedging itself into the groove regardless of the angle of pitch. Selfadjusting! Fewer sizes to carry, insure a quicker turnover. sure a turnover.

Automotive Products

All In One Dressing Aluminum Enamel Battery Paint Bearing Blue Clutch and Brake Compound Enamel (Air Drying) Enamel (Cylinder)

Fan Belts
Friction Tape
Gasket Cement
Graphite
Lucky Star Casing Patch
Superior Casing Patch
Polish—Auto Body

Red Tip Blowout Patch White Tip Blowout Patch Blue Tip Blowout Patch Radiator Cement Orange Shellac Radiator Hose Rim Paint

Rubber Cement Shellac (Gasket) Rubber Filler and Cement Spring Lubricant Tire Mica and Tire Tale

Leather Dressing
Metal Polish and
Nickel Polish
Pedal Pants
Tire Paints
Valve Grinding
Compound
Varnish (Clear Au(o)

Specialize on Rie Nie Fan Belts



If your jobber cannot supply you, write direct to us-now!

eatures that sell the new Chevrolet

CHEVROLET plants are running full production schedules. It is now taking more than 2,000 cars a day to fill Chevrolet orders.

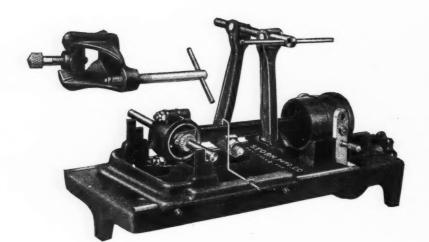
The quality features of the new Chevrolet, its modern design, sturdy construction and fine appearance have created an enthusiastic demand for these cars. This ready public acceptance of the car together with Chevrolet's tremendous production is bringing Chevrolet dealers a splendid volume of sales.

CHEVROLET MOTOR COMPANY, Detroit, Michigan Division of General Motors Corporation

for Economical Transportation



QUALITY AT LOW COST



STORM

Riteway Connecting Rod and Piston Aligner

A WINNER FOR GARAGE MEN

The shop that is doing the biggest business today is the shop that keeps up with the latest developments in repair equipment. By doing this, the garageman is able to give his customers the best service at the lowest possible cost. That is what the motorist is looking for, and the shop that can give such service is the shop that is getting the

The new Storm Connecting Rod and Piston Aligning Jig is a tool that answers a long felt need of garage owners. It introduces an entirely new method of aligning the piston and wrist pin with the connecting rod bearing. It checks the connecting rod for either a twist or bend in one operation, and without disassembling same from the piston. Almost instantly adjustable to any size bearings, including all undersizes or oversizes. No need to adjust connecting rod bolts or remove shims. Shows all inaccuracies of the connecting rod and where corrections should be made. Special tools are provided so that you can quickly and easily correct a bend or twist in the rod, and with absolutely no chance of springing the main fixture. Very reasonably priced and will pay for itself in a short time.

STORMIZING

The Better Method of Cylinder Reconditioning

Stormizing Machines produce a "gun barrel" finish in cylinder renewing that has never before been obtainable. Its automatic action and self-centering features cut actual time spent on the job to a minimum as mechanic's time is required only for starting.

It insures a cylinder that is 90 degrees square with the crankshaft.

Stormizing Machines are made in three types to meet various shop requirements.

Model S—portable. Capacity 25%" to 45/2" diameter.

Model M—as illustrated. Semi-portable. Capacity 25%" to 6" diameter.

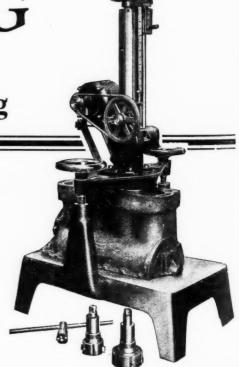
Model R—heavy duty machine. Capacity 25%" to 12" diameter.

The Storm Book "Modern Cylinder Methods" contains some valuable information for you. IT'S FREE. Write for it today.



406-A Sixth Avenue, South

Minneapolis, Minn.

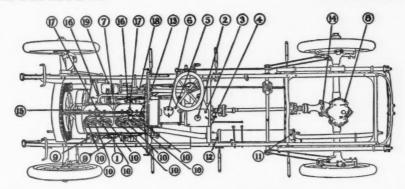




TANPAC

Fibre Sheet Packing

The Best for oil, grease, etc., and where there is no heat.



There are 25 Uses for TENAX or TANPAC on Every Car You Service

TENAX Compressed Asbestos Sheet Packing is especially adapted to use on automobiles. It is for those parts that come in contact with extreme heat.

TANPAC is a vegetable fibre chemically treated—tan in color. Contains neither rubber nor asbestos. Does not soften under most trying conditions.

Made for use against oil, grease, gasoline, coal tar, alkali, water, etc. Light weight, but tough. Comes in sheets, rolls or gasket form.

Most leading jobbers are supplied with adequate stocks of TENAX, TANPAC and the other ADVANCE products listed below. Ask for them by name. They make maintenance jobs pay.

Here are 25 uses for TENAX and TANPAC on the chassis of an automobile. Those marked with

(*) require TENAX. All others call for TANPAC.

1. Oil pan gasket. 2. Transmission case filler plug.

3. Transmission case cover. 4. Transmission counter shaft opening cover. 5. Clutch case flanges. 6. Clutch case hand hole cover. 7. Cylinder base gasket. 8. Differential housing cover.

*9. Exhaust manifold gaskets. *10. Spark plug gaskets. *11. Muffler rear end header. *12. Muffler front end header. 13. Steering gear case.

14. Pinion shaft housing flange. 15. Oil pump.

16. Intake manifold gaskets. 17. Water manifold gaskets. 18. Universal joint housings. 19. Radiator Mountings. 20. Gasoline tank mountings.

21. Vacuum tank cover gasket. *22. Cylinder head gasket. 23. Timing gear case cover gasket.

24. Carburetor flange. 25. Starting motor mountings (flange type).

Besides These Other Advance Products



Tenax Handy Pack

Contains strip 10 in. x 50 in., 1/32 in. or 1/16 in. thick.



Adpasco Treated Gasket Paper

For use where there is no heat. 36 in. x 40 in



Perfection Pump Packing
A long strand flax, made purposely for use
water. Does not disintegrate in water.
Overcomes clogging in circulatory system.



Adpasco Candle Wick and Asbestos Wick

Highly absorbent. Convenient in form. In bags or balls.



Bestallic Twist Asbestos Wick Packing

For valve stem stuffing boxes, circulating water pumps, etc. Sizes, 1/16 in. to % in. Spools ¼ lb. to 1 lb.

Bestallic Sheet Packing



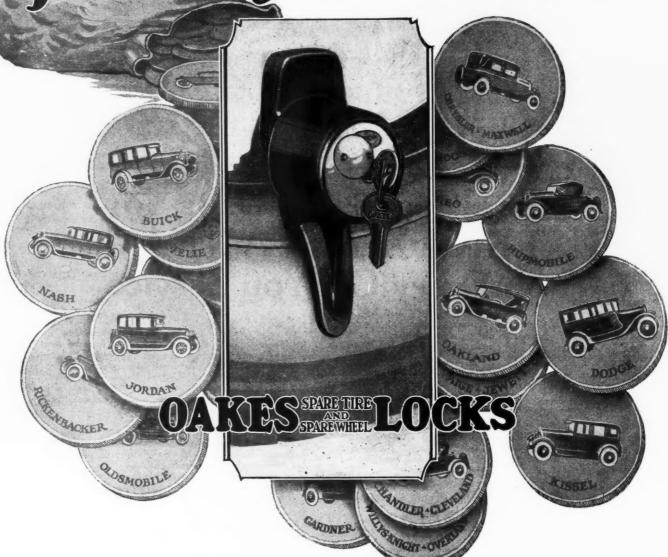
woven asbestos yarn on fine brass. Graphite back. Red adhesive face.

ADVANCE PACKING & SUPPLY CO.

808 Washington Blvd.

Chicago, Illinois

Extra Dollars for Every Car Dealer



ITH every new car you sell, make an extra profit by selling an OAKES Spare Tire or Spare Wheel Lock. Many of the biggest and most progressive car dealers in America are doing this.

Car owners are glad to buy the modern, handsome, efficient OAKES LOCK. The day of makeshift straps, cables, chains and padlocks is gone. Keep up with the times! Order a supply of OAKES LOCKS from any up to date jobber.

THE OAKES CO. INDIANAPOLIS

Originators of Better Tire Locks

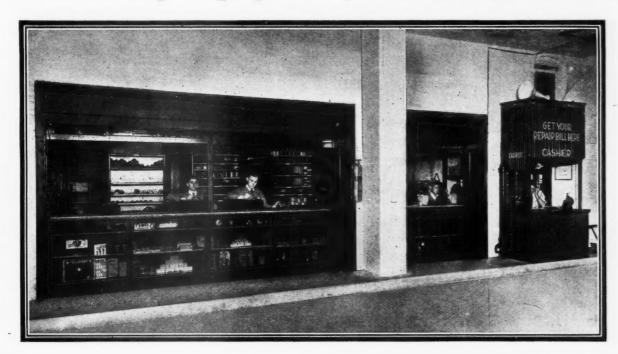
Established 1910

Division Martin-Parry Corporation

Manufacturers Radiator Cooling Fans, Spare Tire Carriers, Spare Tire and Spare Wheel Locks Water Pumps for Fords, Fender Braces for Fords

LYON AUTO PARTS CONTROL

Steel Storage Equipment for Automotive Parts



Display, Orderliness and System Help Sales

This photograph, from Summers Herman Company, Louisville, Ky., tells its own story as to why automotive dealers equip their service departments with Lyon Auto Parts Control Systems.

Such an installation helps sales. Notice the glass front counter. A jeweler doesn't display his goods in a more appropriate setting. The linoleum top is fit for the display of silks, yet over it batteries and castings, springs and brake bands may pass indefinitely without leaving traces of wear.

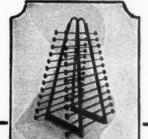
Back of these rigid, steel glass-fronted counters is the stock arranged in proper order and in

correct quantities on Lyon Steel Shelving. Everything is in its place. Every part is quickly reached because the system is simple and easy to understand. A Parts Index Board instantly locates every item and gives the selling price.

Lyon Auto Parts Control Systems are strong and rigid. Built for permanent use. An installation can be moved, or expanded as you wish.

There's a Lyon System that will fit your needs as well as this one fits the needs of this Louis-ville firm. Write us, giving the size of your stock and we will send you illustrations and descriptions of the exact system for your requirements.

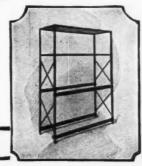
Lyon Metallic Manufacturing Company Aurora - Illinois



Lyon Auto Parts Control Systems are sold by leading Automotive Jobbers



for every storage need



Rickenbacker



- "Hills—there are no hills, so far as the Rickenbacker driver is concerned.
- "Mountains—are play things for the new Rickenbacker Six," says "Cannon Ball Baker" in speaking of his great record making drive across the continent and then from Canada to Mexico.
- "The up-grades were easy—all I had to do was shut off power to keep from shooting clear over the next turn—"
- "Power? —Always a surplus, even when climbing the steepest grades and sharpest turns of the switch-backs in Grant's Pass;—
- "Why the grades seemed to flatten out as the front wheels touched them.

- "We could make 45 miles up the steepest easily.
- "So far as hills are concerned there are none — the Rickenbacker Six has rendered them non-existent for its lucky owner.
- "The down grades would have bothered us, however, but for our wonderful 4-wheel brakes.
- "The combined climbing power of the motor and the absolute certainty of the brakes, made it possible for Rickenbacker to shatter records that had stood for years."
- Here is a car that will give supreme satisfaction in the hands of the owner and one therefore, that is a delight to the dealer who handles it.

Rickenbacker Motor Company

Detroit, Michigan

	F	am	ous '	"Six" P	rices				Vert	ical "F	ight"	Prices		
Phaeton			-	-	-	-	\$1395				-5			
Coach-Broug	ham						1595	Phaeton	-		-	-	**	\$2195
Roadster		- 9	-	-	-	-	1595	Brougham		-	-	-	-	2395
Coupe	-		-		-	-	1895	Coupe	-	-	-	-	-	2695
Sedan	-		-	-	-		1995	Sedan	-	-	-	-	-	2795

f. o. b. Detroit-plus war tax





HARTFORD, CONN., U. S. A.

The World's Largest Producers of Drill Chucks

Are salesmen a bore?

The Branches You Located

EASTERN DEPARTMENT

Boston			Massachusetts
New Haven			. Connecticut
Binghamton			New York
Long Island C	it	У	New York
New York City	y		New York
Newark			. New Jersey
Philadelphia			Pennsylvania
Baltimore .			Maryland
Charlotte .			North Carolina
Atlanta			Georgia
Birmingham			Alabama
_			. Pennsylvania
			New York

CENTRAL DEPARTMENT

Chicago				. Illinois
Detroit				Michigan
Cleveland .				Ohio
Cincinnati .				Ohio
Parkersburg		V	Ves	t Virginia
Indianapolis				. Indiana
St. Louis .				Missouri
Memphis .				Tennessee
New Orleans				Louisiana
Houston				. Texas
Tulsa				Oklahoma
Kansas City.				Missouri
Omaha				Nebraska
Milwaukee .			. '	Wisconsin
Minneapolis				Minnesota
Denver				Colorado

WESTERN DEPARTMENT

San Francisco			. Californ	nia
Seattle				
Portland			. Oreg	on
Salt Lake City			Ut	ah
Los Angeles				
Phoenix			Arizo	no

"ALL SALESMEN bother us more or less," said an Indiana engineer, "but some concerns do not perpetrate salesmen of the *boresome* sort. They are often helpful in making clear some obscure matter. Their companies would probably sell exactly as much goods if they did not help us, but the goods would not give as much satisfaction, for the simple consideration that we should not be able to make the best use of what we do use."

Oxweld Salesmen are neither order takers nor peddlers. Nor are they of the boresome sort. They are technical advisers and helpers, and their chief mission is to see that you get the greatest possible use out of your Oxweld apparatus.

Every Oxweld representative will tell you honestly whether you can use Oxweld apparatus profitably or not. Every one can help you extend the usefulness of our apparatus after you purchase it. Half of these field representatives have been with Oxweld for five years or more and can bring valuable experience to you.

OXWELD ACETYLENE COMPANY

Chicago 3642 Jasper Place Long Island City, N.Y.
Thompson Ave. & Orton St.

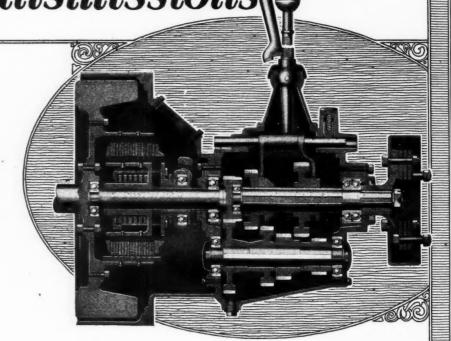
San Francisco 1050 Mission Street



WORLD'S LARGEST MANUFACTURERS OF WELDING AND CUTTING EQUIPMENT

New Departure Ball Bearings in Transmissions

A "full-jeweled" transmission u n i t typifying the peak of perfection in engineering practice.



An "Ear-mark" of the Quality Job—the Ball Bearing Transmission

ACCURATE shaft alignment means perfect gear meshing. New Departures give you this condition indefinitely and without adjustment.

Adjustment, very difficult and uncertain in gearsets, is unnecessary, since New Departures do not wear to need it.

Other bearing types have been known to expand sufficiently to crack gear cases, and in extreme cold weather to fail from insufficient flow of lubricant. This can never happen in the New Departure, because the very slight oil film needed to prevent failure is present at all temperatures.

Notice the number of cars that are changing to ball bearing transmissions.

THE NEW DEPARTURE MANUFACTURING COMPANY,

Detroit Bristol, Connecticut

Chicago







Blindfolded Customers!

Eighty-seven per cent of all buying is done by sight. Stores that "storage" their goods in blind counters and shelves are simply blindfolding their customers.

The Sherer Accessory Case opens the customer's eyes—wide. It displays goods in a way that simply reaches out and grasps the customer. Designed to display well and still provide ample storage space, the Sherer Accessory Case also speeds up service, increases turnover—prevents depreciation of stock and modernizes your store.

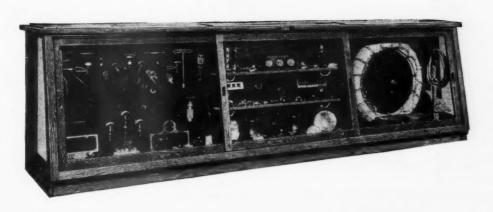
Sherer equipment always proves a paying investment. Unless conditions assure this, the installation is not advised.

For the Sherer Retail Advisory Bureau consults with you and reviews your entire selling problem. A staff man is sent to you by appointment. Due to long display experience in many lines of business, he is fully qualified to advise with you.

Make an appointment by mail with a Sherer Retail Display Advisor. A conference with him is an education in the methods of successful business.

SHERER-GILLETT COMPANY, 17th & S. Clark Streets, CHICAGO

C II C II C II I II C II C II DISPLAY E QUIPMENT



The Story of

the Empire New Process Bolt Chapter 1. No. 4

The Eye That **Never Misses**

What a cut bolt thread looks like



under the searching eye of the Comparator

F course you can't see it with the naked eye, unless the thread is broken down altogether.

But there is another eye, the eye of the Comparator, with its cold, white, remorseless light that will see it for you-and show it to you.

Then you will know why so many bolts won't fit, why so many bolt threads stick or strip or slip.

And you will be cured of cut thread bolts from that day on.

Empire Bolt Threads Are Now Made Without Cutting

The edge of a cutting die grows duller with every bolt that passes through it. And the duller it gets the less accurate the thread becomes. You never know what's going to happen when you turn a nut down on a cut thread bolt-whether the nut will finish the journey, or get stuck half way down, or whirl around without going anywhere at all. Anything's possible.

That is why Empire engineers developed their wonderful new process of thread building. They sought a method that would eliminate the defects of die cut-

They produced a die that builds up the thread under pressure on a specially prepared blank. This die is made on a machine tool of a new type that works to unbelievably close limits of accuracy.

The Last as Accurate as the First

Run through the die, the prepared blank comes out a perfect bolt. It's not just the first few bolts that come out that way, but as many as are run through for as long a time as the bolt machines are kept going! The fifty thousandth bolt will be as accurately threaded as the first.

Empire New Process bolts are now in full production, and available at no advance in price over former Empire bolts.

Free samples, if you want them. Write and ask.

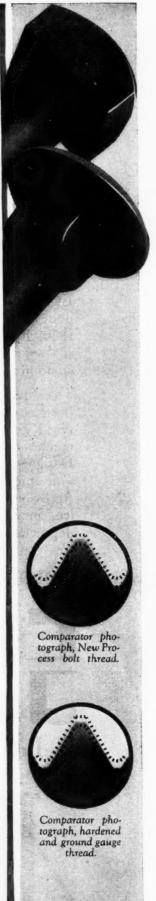


PORT CHESTER.N.Y.
CHICAGO · SAN FRANCISCO

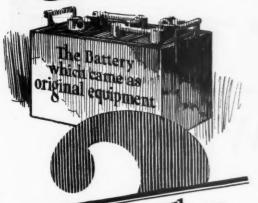
Makers of Bolts, Nuts and Rivets Since 1845



New Process BOLTS



750,000 Vesta Batteries



Why Did They Change to the Vesta Isolator Battery



Were Selected In Preference to Original Equipment

—because when the superior qualities of VESTA construction were demonstrated against ordinary battery performance, the only logical decision was, "Install a VESTA."

Thousands and thousands of car owners know the value of quality. Service to them is cheaper than price. They are the buyers of VESTA.

Demonstration of the distinct departure in VESTA Isolator Battery Construction means sales to you. And VESTA sales mean worth-while profits.

VESTA, too, provides you with three complete lines—Isolator, Standard and Vaco. With this trio of quality you can go out of your way to meet competition—and beat it.

VESTA

COSTS LESS PER MONTH OF SERVICE

VESTA Battery Corporation Chicago, Ill.

Vesta Radio Batteries "A" Batteries "B" Batteries





And Then What?

HEN the car owner finally decides to follow your suggestion and asks you to "Fix'er Up," what will you do? Surely you will inspect the cable system and it is not at all unlikely that you are going to find some cable which is oil-soaked, abrased, or damaged in some such manner as to warrant replacing. By reference to the Packard Wiring Chart you can select in an instant and by trade number the proper style of Packard Cable to install.

The owner is going to recognize real service when he gets it and he is going to appreciate your service more when he learns that you have replaced his bad cable with Packard.

Over 300 of the leading Automotive Jobbers in the United States carry a complete stock of Packard Automotive Cable.

There is a Packard Wiring Chart for you which will be sent immediately upon request.

The Packard Electric Company

WARREN, OHIO

Tackard is never seen, except on goods of honest value



E'RE making this unqualified offer of SERVICE to nearly seven million readers of The Saturday Evening Post and other national publications, and over three and one-quarter million readers of farm publications. We're here to help owners of your cars get every nickel's worth of use out of their present batteries first.

The Willard Battery men

HOLMES WRECKERS

- increased our Repair Business 300%



Holmes Wreckers have made more money and have advertised our business more than any other investment we have ever made. Our wrecker fees seldom run below \$300.00 and frequently as high as \$600.00 per month. They have increased our repair business between 300% and 400%. They prove an added value to our business each day.

This statement is remarkable, but when you consider that there are fifteen other Holmes Wreckers in our city, and all making money, you can see just what wonderful money makers these machines really are. Like most garages we were blind to the value of Holmes Wreckers for many years, but it did not take us long to see the value after we put it on the streets, for the first month it brought us \$250.70 in towing fees alone.

Every garage should have a Holmes Wrecker; it is the surest money maker they can get. It will pay its own way and bring a big profit besides. We know this from actual experience.

HARTily Yours,

Pettert

Holmes Wreckers know no favorite. They bring big profits to the large and small alike. Don't delay getting one. You are not too small nor will you have any trouble financing it. Get the facts. Find out about the big money that awaits your Holmes Wrecker.

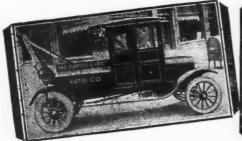
Your jobber will gladly explain the advantages of Holmes Wreckers (3 types) to you. Ask him or write this company for complete information about Holmes Equipment.



Mr. R. H. Hart

President, Hart's Garage, Chattanooga, Tennessee, has written this advertisement for Holmes Wreckers. It is the second of the series prepared by leading garage men of this country for the Ernest Holmes Company.

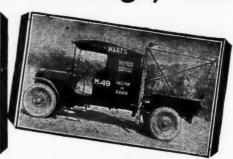
ERNEST HOLMES COMPANY, Chattanooga, Tenn.



Holmes Wrecker No. 110



Holmes Wrecker No. 485



Holmes Wrecker No. 250



TYPE 600

BOSCH Ignition for **FORDS**



nition systems on many of the high priced cars. That makes driving easier and safer you can keep both hands on the steering wheel.

The new Type 600 is a wonderfully efficient and durable Ford ignition system—sold at a price which every Ford owner can pay—only \$12.75 (\$17.50 in Canada)

Sell Bosch Type 600 Ignition—it's the biggest value ever offered Ford Owners.

AMERICAN BOSCH MAGNETO CORP. Main Office and Works: Springfield, Mass. Branches: New York Chicago Detroit San Francisco





"Service at a Profit"

Second Annual

National Automotive Service Convention

and

Automotive Maintenance Equipment Show

at DETROIT MAY 20-23

General Motors Building

To be held under the auspices of NATIONAL AUTOMOBILE CHAMBER OF COMMERCE, INC. with the approval and co-operation of

Motor and Accessory Manufacturers Association, Automotive Equipment Association, National Automobile Dealers Association, Society of Automotive Engineers, Automotive Manufacturers Association and Automotive Electric Association.

Last Year

800 attended the convention 105 companies exhibited at the show 2600 from 33 states registered at the show

This Year

The Convention will have an even better program and the Show will be bigger. Everyone in Automotive Service Invited

YOU WILL WANT TO BE THERE

WELCOME !

Second Annual
AUTOMOTIVE MAINTENANCE EQUIPMENT
SHOW

General Motors Building, Detroit, Mich. May 20 to 23, 1925

Fill out the blanks below and change at door for Season Ticket PLEASE PRINT YOUR NAME

Name

Representing

Address

HEYSTONE RADIATOR CAPS

NO KEYS~NO CHAINS

The Utmost in Utility

Senior and

no set screws
Design & Protection

Junior Design

The Keystone Senior

The Keystone Eagle

Exceptional Value

In the Senior and Junior Models we offer exceptional value in the ordinary bar type ball and cap. The artistic touch of navy blue in the Liberty Design marks it with distinction.

There is every essential a good cap should have —Self Locking, Theft-proof, Ornamental and Easy to Refill.

Effect this saving for your customer and build greater volume in cap sales. The Senior is listed at \$4.50—the Junior \$3.50.

Exceptional Beauty

For those who desire something different and distinctiveness—we offer the Eagle model.

The most beautiful cap on the market plus the time proven and accepted Keystone mechanical features.

Beautiful—Individual—Every utility—yet reasonably priced — \$6.00 including initial or emblem—the Eaglet \$4.00.

If your distributor can't show you these caps, write us.

THE NORLIPP COMPANY—568 W. Congress St. CHICAGO





Your Customers All Need This! —and experience shows they will buy it

WE HAVE A PLAN that shows how to cash in on this business.

In night-driving:

It is not only fair to the approaching motorist to dim your headlights gradually—it is the right thing to do for your own protection.

The sudden change from brilliant light to darkness is blinding. Accidents often occur—disaster frequently follows.

The Lorentzen Headlight Kontrol operates like the rheostat on your radio. It dims the lights gradually—by easy stages. Your eyes accustom themselves to the change—naturally.

Lorentzen Headlight Kontrol is the logical dimmer. Your extended finger tip controls the headlights. No need to remove hand from wheel—foot from pedal—eyes from road.

Two sizes fit all cars. No. 1—6 to 8 volt. No. 2—12 to 16 volt. One low price—\$7.50. Liberal discounts. Effective Dealer Helps. Clean cut merchandising policy. A profit builder every way. Installation a matter of ten minutes. Put on with a screwdriver. A sale means another sale. Not an accessory—a necessity.

Don't wait for your jobber's salesman to call. Write him or write us.

LORENTZEN HEADLIGHT KONTROL, INC. 60 Grand St., New York City

Seven Easy Steps

The eyes follow the seven stages of Lorentzen Headlight Kontrol without strain or effort—naturally. The gradual dimming allows the pupil of the eye to enlarge without danger of blind spots. If you don't "cross" nature you don't "cross" trouble.







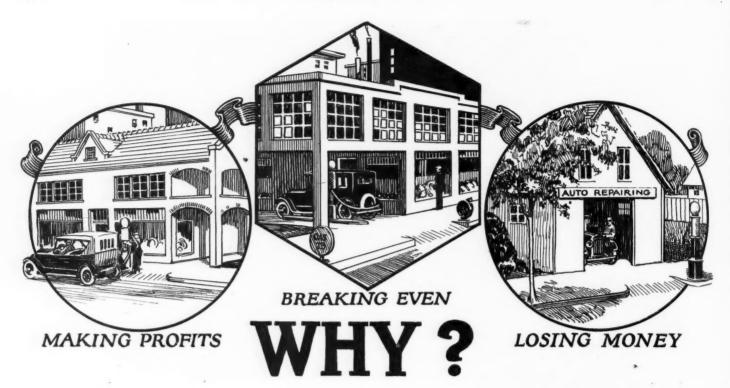












The Difference Comes in Knowing How

There are three kinds of automotive dealers—those who are making money, those who are not making money, and those who are actually running their business at a loss.

Only one kind survives—and that is the first of the three.

Profit makers know how. They take advantage of every opportunity to learn. Reading right, is perhaps their most productive teacher. It shows them dozens of ways to success.

Every week MOTOR AGE brings to its subscribers ways and means of making good. Every week there is something of money value in it for you.



5 So. Wabash Ave.

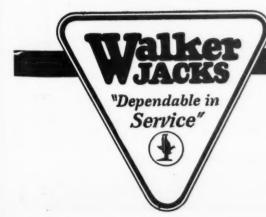
Chicago, Ill.



I have hundreds of letters from dealers, now using the Walker Counter Display, who say they are selling from two to three times as many jacks as they ever sold before .. A good jack on display reminds many car owners of the trouble they experienced the last time they changed a tire and often makes a sale that otherwise would have been missed. The Walker Counter Display is working for others .. Let it work for you.

Millard Chalker

President.



Walker Manufacturing Co.
Racine, Wisconsin

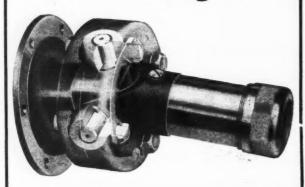
Apri

In Your Own Interest As Well As Your Customer's

When a motorist comes to you with universal trouble, don't cheat yourself of your full and rightful profit; and still more important, don't cheat yourself of his good will, —by making repairs, which are at best but temporary.

Replace the old universal with

"MECHANICS" Oil Lubricated Universal Joint



and make the car owner your friend and booster. You can guarantee satisfaction without any hesitation.

You can also make a neat, two-way profit on the MECHANICS—on its sale, and on its installation.

Installation will give you no trouble, for it involves nothing more than cutting the shaft to the proper length and fastening in place.

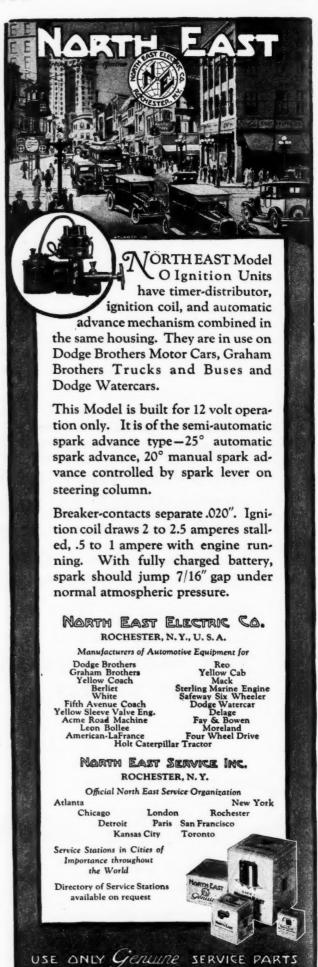
The MECHANICS comes to you filled with oil, ready for a full season of driving without any attention.

Why not write today for prices and complete information on the MECHANICS. Our proposition is framed with the idea of helping YOU to make money.

MECHANICS MACHINE CO.

Rockford,

Illinois





THE NEW WILLS SAINTE CLAIRE SIX IS THE RECOGNIZED ENGINEERING ACHIEVEMENT OF THE YEAR * * * * *

ADVANCED engineering and advanced metallurgy have produced no finer car than the new Wills Sainte Claire Six.

It is the recognized engineering achievement of the year—a car designed and built on experience—on proved engineering.

It is not a price-built car, but a piece of priceless quality embodying the same advanced principles of engineering; the same supersteels and careful workmanship which have caused the Wills Sainte Claire Eight to be regarded as the most finely engineered and finely built motor car in America.

It has overhead valves and cams—a principle of engineering used in the highest type aviation motors and in several of the finest cars in Europe.

It has the most accessible and the cleanest motor ever designed. The cylinder head and valve and camshaft housing are removable.

Grinding valves, removing carbon and resetting tappets all can be done from the bench.

The cylinders are cast integral with the upper half of the crankcase and adjusting valves is merely a matter of removing the two cover plates on valve housing.

The seven-bearing crankshaft is a remarkable piece of engineering and a su-

perb example of precise workmanship. It is supported by seven main bearings which are $2\frac{1}{2}$ inches in diameter with a total bearing surface of $82\frac{1}{2}$ square inches.

As an example of the infinite care in the manufacture of every working part, all pistons, connecting rods, bearings, cylinder heads, every part of one motor is interchangeable with corresponding parts of every other motor.

Molybdenum steel, the most marvelous alloy steel ever developed, is liberally used throughout the chassis where stresses and strains are encountered, assuring thousands upon thousands of miles of the safest possible and the most luxurious transportation at the minimum maintenance and operation costs.

It has a proved and fully developed system of hydraulic four-wheel brakes; specially designed disc wheels; the most efficient cooling and oiling system on any car; balanced balloon tires and deep yielding upholstery.

The above are but a few of the many advanced principles of engineering and metallurgy embodied in the new Wills Sainte Claire Six. Complete information regarding the construction of the car and also the details of the Wills Sainte Claire Franchise will be sent to any dealer upon request. Address the Sales Department.

WILLS SAINTE CLAIRE, Inc.

Marysville, Michigan

WILLS SAINTE CLAIRE

Motor



Cars







Notice the Exhaust Gas Heat Inlet Opening and Damper or Door within same. As the Throttle Valve closes, the Heat Damper opens automatically, thus providing the important feature of Automatic Heat Control.

Marvel is Standard Equipment on Buick (for 12 years) and on NASH (for 7 years).

NEW MARVEL CARBURETER for CHEVROLETS

Trouble in starting a cold engine, backfire and spitting of a motor, and refusal to throttle low and idle smoothly, are usually caused by a long intake manifold, the mixture chilling before it enters the explosion chamber.

Installation of a Marvel on the Chevrolet raises the carbureter about EIGHT INCHES, thus keeping the mixture warmed until it enters the cylinders.

Marvel is the ONLY carbureter which secures perfect VAPORIZATION of Gasoline by surrounding the Mixing Chamber with HEAT—Heat automatically controlled by the

These two features make Marvel the ideal carbureter for every Chevrolet. It will eliminate starting and idling troubles and greatly increase the power, flexibility and economy of the Chevrolet motor.

The new Marvel model for Chevrolets is the first step in a new program of one of the oldest, best-established carbureter manufacturers in the automotive field. Other models for popular cars will be announced in the next few weeks.

A new model just ready for the new 1925 Chevrolet with short manifold that gives wonderful results.

Special Ford and Studebaker models now ready:

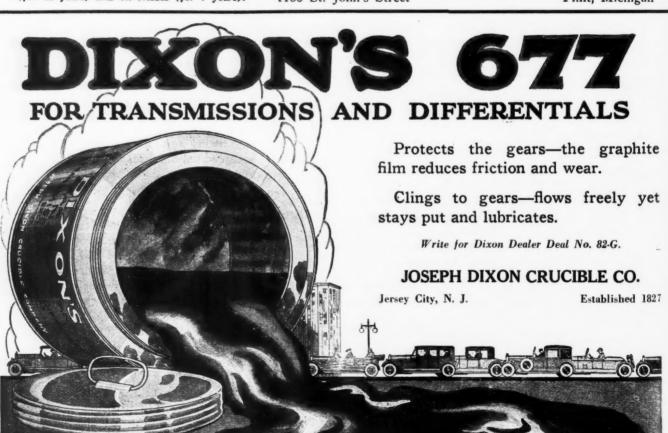
Ford, \$18.00 Studebaker, \$28.00

Ford, \$18.00 Studebaker, \$28.00 (Slightly higher on West Coast)

Every Accessory Dealer and Service Station will be interested in this field for new business—profitable business. Write today for the Marvel booklet of carburetion facts, "Exhaust Gas Put to Work," and for details of our attractive dealer and distributor proposition.

MARVEL CARBURETER COMPANY

1100 St. John's Street



NOT AFFECTED HEAT \mathbf{BY} OR PAYS TO HAMER HOME THE FACT THAT YOURS IS A The moid SHOP

Service



For Short Stops and Long Service



If You Are a "Brake Doctor"— Tell the World So

IF YOU know what ails a brake when it's cranky—if you know how to line a brake with the best of them—let the motorists of your community know it.

We are spending thousands of dollars every year in national advertising, warning those same motorists against the dangers of faulty brakes. We are advising them to consult the "brake doctor" early and often. We are telling them wherever they see the Thermoid Service Sign they will find a brake specialist. Put that sign over your door. It's about the cheapest and best advertising for your shop you will ever do. And every year that sign will become a more valuable trade puller for you.

It pays to identify your shop with the most widely advertised and most reliable lines of automotive products. There can't be much argument about that. And certainly there is no name that carries more weight with the trade and the motoring public than "Thermoid."

THERMOID RUBBER COMPANY

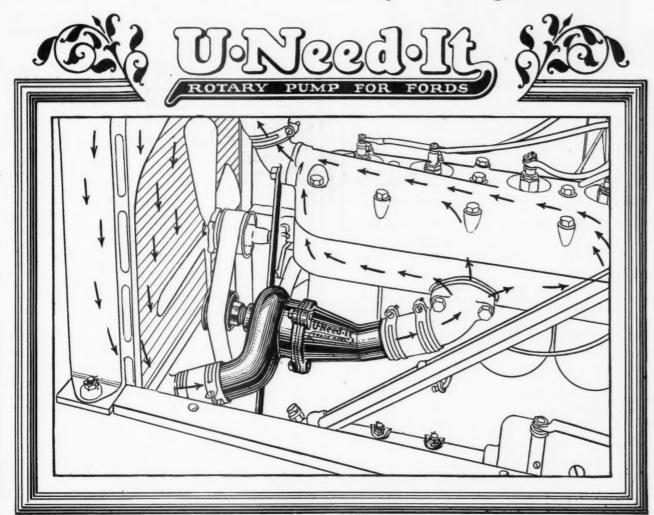
Factories and Main Offices, TRENTON, N. J.

Makers of Thermoid and Rexoid Transmission Lining, Thermoid-Hardy Universal Joints and Mechanical Rubber Goods



Thermold Hydraulic Brake Lining

Learn All About This Wonderful Pump for Jords



Here is the pump for Fords that you will prefer because it has all that a pump for Fords should have without any of the short-comings.

It is a pump that a Ford owner will appreciate for the same reason that he prefers a Ford—performance.

It is THE correct principle—the Archimedes propeller—that gives up to ten times as much as the ordinary volume of water circulating through the Ford system.

It presents a remarkable opportunity to dealers everywhere—an all year seller—needed in winter to prevent freezing and in summer to keep from heating. Send for our generous sales plan.

THE TURNER MFG. CO.

31st and Roanoke Rd. Kansas City, Mo.

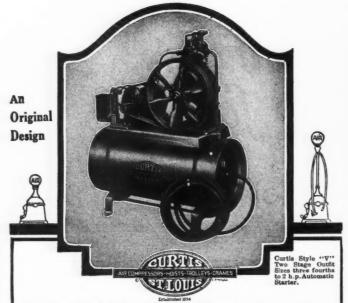
It is sensibly attached—in a natural installation simply taking the place of the lower water pipe on the Ford.

U-NEED-IT PUMP has two Phosphor bronze bearings extra long and self lubricating, assuring long life without vibration or rattle.

Runs with loose belt—not a tight one.

\$6.50 Roosting Dead Roseoke by L. M. E. D. Book Roseoke by L. M. E. D. Book Roseoke by L. M. E. D. Book Roseoke by L. M. E. Book Roseoke by L. M.

Busite Turner City, Les sent For Address CITY STATE, 50.5



Stability~Progress

Backed by 71 Years' Experience

Every Curtis Compressor Outfit and Air Stand has a background of stability measured by 71 years of progressive manufacturing experience.

The last 28 years of this long period have been devoted to the design and perfection of Curtis Air Compressors—so that today every buyer of Curtis equipment can be certain of these two vital facts:—(1) He is buying a thoroughly reliable product that has long been recognized as the standard of excellence and (2) he is dealing with an institution of known integrity and stability whose product is not likely to become an "orphan."

Superior Curtis Compressor Features

Controlled splash oiling system enables compressor to run longer on same amount of oil. Fan flywheel helps cool cylinders and increases efficiency. Valves light, large, inspectable. Heads removable without loosening pipe connections. Hand unloader (or centrifugal on automatic outfits) permits starting unloaded against full tank pressure. No spitting of oil when the Curtis Automatic cuts out. Curtis two-stage has copper inter-cooler, the most efficient metal for this purpose. Many other features.

ICERTIES.

CURTIS AIR AND WATER STAND — Made either column or low type, free from all complicated parts, automatic valves and the like which quickly get out of order. Present many exclusive features.

CURTIS PNEUMATIC MACHINERY CO.
1527 Kienlen Ave. St. Louis, U. S. A.
Branch Office: 530-HHudson Terminal, New York City

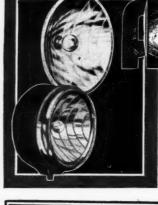


1854 ANNIVERSARY 1925

-			
CURTIS	PNEUMA	TIC MACHINERY	CO

CURTIS	PNEUMATIC	MACHINERY CO),
1527 KIENLEN	AVE.	ST. LOUIS, MO	0

Gentlemen: — Please ser.d me full details on □ Curtis Air Compressors □ Curtis Air Stands, your proposition and prices.



How to Install a Flatlite Reflector

in any Headlamp

Easy to Install

why

BECAUSE these patented reflectors when used for replacement go right over the old reflector in any headlamp. Almost as simple as putting in a new bulb. Old lenses are replaced with plain window glass supplied.

What flatlite does

Flatlite makes it possible for every car owner to enjoy perfect headlamp service either from his present headlamps equipped with flatlite reflectors or from flatlite headlamps complete. Flatlite reflectors project, through plain glass lenses, a wide, flat, full-power beam of light that is legal everywhere and safe always.

Distributors and dealers are making big money with flatlite—INVESTIGATE!

The American Flatlite Co.

Department A

Reading Rd. at Dandridge St. Cincinnati, Ohio



REFLECTORS for replacement in any headlamp

HEADLAMPS to fit all cars

"flatlites bring daytime safety to nightime driving"



No Cloth in its Innards

Did you get that?

That's why EKLA is a better radiator hose.

That's why EKLA Radiator hose costs less to make.

That's why EKLA Radiator hose shows the dealer a bigger profit.

Millions of feet of EKLA—used during the past three years—have proved that a radiator hose doesn't have to have cloth "in its innards" to stand the gaff.

EKLA Radiator hose is "All-Rubber" — tough and long-wearing — all the way thru — not just an inside layer. There are no plies to crack, separate and clog the cooling system.

Sold in cut lengths for FORDS and in three-foot lengths, all sizes, with inch markings.

We also make EKLA CORD—"Heavy Duty" and MUSKETEER—"Price Competition" inner tubes. A few more distributors can make some unusual profits with these high quality tubes.

Send for prices and discount. Catalog pages and cuts (catalog or newspaper) furnished on request

The Eclat Rubber Company

Cuyahoga Falls, Ohio

U. S. A.

L. E. Spencer Company, Nashville, Southern Representative L. E. Green, 85 Second Street, San Francisco, Coast Representative

WATERVLIET

SPIRAL EXPANSION ALIGNING

REAMER

for piston pin bushings on all cars and trucks

DESIGNED for one particular purpose... piston pin reaming... and does that job RIGHT.

Users know Watervliets not only do a better job but actually pay their cost in time saved on the first few operations.

Front and rear pilots guide for perfect alignment; rose reamer on front pilot does all rough cutting. Accurate expansion for oversize work. Gives full bearing surface with mirror-like finish.

Resharpening Service

We'll gladly resharpen your Watervliet for a service fee of \$1.

They Will Not Chatter

Ask Your Jobber or Write for Literature

Watervliet Tool Co., Inc.

1037 Broadway, Albany, N. Y.

New York—1780 Broadway Kansas City—711 Mutual Bldg. San Francisco—661 Turk St.

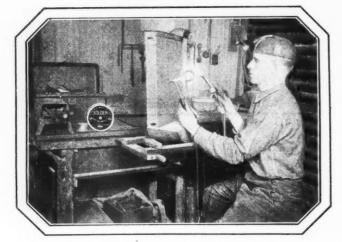
KESTER SOLDER

Self-Fluxing



(Underwriters' Laboratories Inspected)

"Requires Only Heat"



For Reaching Difficult Spots

THINK of the many "hard to reach" soldering jobs that have taken more time than you've figured. Nobody likes those jobs—yet everybody can handle them quickly and satisfactorily with Kester Solder.

Kester saves time on every soldering job, because it is self-fluxing. Scientifically prepared flux is held in tiny pockets inside this virgin tin and lead solder. Simply apply heat to the job, and as the pockets melt one by one, the exact amount of solder and flux flows right where you guide it.

Old-time mechanics find in Kester a daily dependable necessity, and by its constant use they profit.

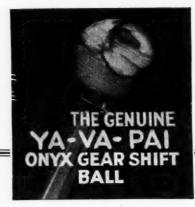
Heed the "old timers" advice, and do ye likewise.



Kester Acid-Core Solder for general use in 1 lb. cartons; 1, 5 and 10 lb. spools. Small package Acid-Core Solder, Kester Metal Mender for autoist, householder, etc. For delicate radio and electrical work – Kester Rosin-Core Solder.

Manufactured by the

CHICAGO SOLDER COMPANY 4203 Wrightwood Ave. CHICAGO, U. S. A.



SELLS

Beautiful, clean, durable and comfortable to use. Made of genuine Yavapai Onyx, semi-precious stone. Manufactured with standard bushings, and reducers are furnished to fit all cars.

An accessory that sells, fast, to owners of smartly equipped cars, and others who are dressing up for the summer season. Only \$2 in U. S. A.

Order from your jobber or write us direct, giving his name

Yavapai Onyx Mining Corp. Dubuque, Iowa U. S. A.

A Continued Story of the Industry

READING MOTOR AGE every week is very much like following the growth of the automotive industry in story form.

It is as interesting as a fiction serial, and instructive to the point of making better and more prosperous dealers.

Reading MOTOR AGE every week when it comes, assures subscribers that they will stay up to date and profit accordingly.

MOTOR AGE

5 So. Wabash Ave.

Chicago, Ill.



Reflector Controlled Road Lighting is Making Money for Dealers Everywhere

FLOOD of safe, legal light now pours from the headlamps of cars from Maine to California. Light that really shows the way and lays flat and wide and brilliant on the road and ditches. Light that is free from glare because it's below the eyes of the oncoming drivers. Legal, safe light controlled with Victor Brown-Universal reflectors and projected through plain glass lenses.

Dealers everywhere are reporting big sales. Are you sharing in the profits? Your jobber can supply you. Write for bulletins direct to



THE CINCINNATI VICTOR CO. 716 READING ROAD CINCINNATI, OHIO

> "A LAMP FOR EVERY **AUTOMOTIVE NEED"**

SILENT

The superior construction of the joint of the "Whitney" chain with its large bearing surface assures long life, uninterrupted service, and minimium elongation.

> Over 2,000,000 of these chains on the road today.

ALWAYS REPLACE WITH A "WHITNEY"

Authorized distributors listed below

Alabama—Birmingham
Birmingham Electric Battery Co.
Ave. B and 21st St. Arkansas—Little Rock Crow-Burlingame Co California—San Francisco
A. H. Coates Co.
615 Howard St. A. H. Coates C.,
615 Howard St.
Colorado—Denver
Auto Elec. & Appl. Co.
W. 13th Ave., Acoma St.
Connecticut—Hartford
Connecticut—Hartford
Connecticut—New Haven
Replacement Parts Co.
57 Whalley Ave.
Connecticut—New London
New London Auto Parts Co.
57 Bank St.
Florida—Tampa
Wholesale Auto Supply House
309-11 Washington St.
Georgia—Atlanta 309-11 Washington St.
Georgia—Atlanta
Alexander Seewald Co.
81 N. Pryor St.
Illinois—Chicago
L. C. Smith Bearings Co.
2120 Michigan Ave.
Indiana—Indianapolis
Gibson Company
Iowa—Des Moines
Standard Bearings Co.
1020 Grand Ave.
Iowa—Sioux City
Ralph C. Schwinn Co.
511 Sixth St.
Kansas—Wichita 511 Sixth St.
Kansas—Wichita
E. S. Cowie Electric Co.
Louisiana—Monroe
Monroe Auto Supply Co.
Maryland—Baltimore
I. R. Hunt & Co.
Calvert & Saratoga Sts.
Maine—Portland
The Farrar-Brown Co., Inc.
492-498 Forest Ave. auz-498 Forest Ave.
Massachusetts—Boston
Replacement Parts Co.
799 Beacon St.
Massachusetts—Fitchburg
Motor Tire Service Co.
42 Day St. Motor Thre Service Co.
42 Day St.
Massachusetts—Worcester
Motor Tire Service Co.
795 Main St.
Massachusetts—Springfield
E. B. Atmus Co.
113 Chestnut St.
Michigan—Detroit
Mich, Replacement Parts Corp.
4149 Cass Ave.
Minnesota—Duluth
Duluth Auto Supply Co.
118-120 E. Superior St.
Minnesota—Minneapolis
Western Motor Supply Co.
Harmon Place and 12th St.
Missouri—Kansas City
E. S. Cowie Electric Co.
1318 MeGee St.
Missouri—St. Louis
S. G. Harmon M.

Missouri—St. Louis
S. G. Hoffman Mag. Co.
3874 Washington Blvd.

Missouri—Springfield
Ozark Motor & Supply Co.
308 S. Jefferson St.
Nebraska—Omaha
Auto Elec. & Radio Corp.
2813 Harney St.
New York—New York City
L. C. Bigelow & Co., Inc.
250 West 54th St.
New York—Albany 250 West 54th St.

New York—Albany
E. V. Holt Distributing Co.
111 Central Ave.

New York—Binghamton
United Auto Gear & Parts Co., Inc.
133 Water St.

New York—Buffalo
Buffalo Bearings Co.
1030 Main St.

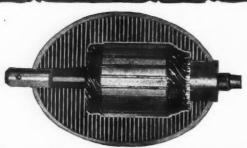
New York—Rochester
Sidney B. Roby Co.
208 South Ave.

New York—Syracuse
Syracuse Auto Parts, Inc.
1005 West Genesee St.

Ohio—Akron 1005 West Genesee St.
Ohio—Akron
The Hardware & Supply Co.
475-535 South High St.
Ohio—Cincinnati
Auto. Bear. & Equip. Co.
205-207 East 8th St. Auto. Bear. & Equip. Co. 205-207 East 8th St.
Ohio—Cleveland
Aberdeen Motor Supply Co. 2014 East 46th St.
Ohio—Dayton
The Lewis Motor Mart Co. 27 East Second St.
Ohio—Toledo
Hawley Sales Co. 624 Jefferson Ave.
Oklahoma—Oklahoma City
Harrison Smith Co.
711 N. Broadlway
Pennsylvania—Altoona
Altoona Auto Supply Co.
1110-15th St.
Pennsylvania—Philadelphia
Auto Equip. & Ser. Co., Inc.
1421 N. Broad St.
Pennsylvania—Pittsburgh 1421 N. Broad St.
Pennsylvania—Pittsburgh
Pittsburgh Auto Equip. Co.
5808-10 Baum Blvd.
Rhode Island—Providence
W. E. Davis Co.
4 Meadow St.
Charles Charleston 4 Meadow St.
South Carolina—Charleston
Gas Engine & Electric Co.
280-282 Meeting St.
South Carolina—Columbia
Whitton Genuine Parts Co.
2121 Main St.
Tennessee—Chattanooga James Supply Co. 1104-12 Market St. ennessee—Memphis Mills-Morris Co. 372 S. Main St. exas—Dallas Harrison Smith Co. 2018 Jackson St. 372 S. Main St.
Texas—Dallas
Harrison Smith Co.
2018 Jackson St.
Vermont—Burlington
Vermont Hardware Co.
Washington—Seattle
A. H. Coates Co.
1115 East Union St.
Wisconsin—Milwaukee
Julius Andrae & Sons Co.
Broadway & Michigan St.

These Distributors make it easier for you to use "WHITNEY SILENT HIGH MILEAGE CHAINS" on all replacements

THE WHITNEY MFG. CO. **HARTFORD** Connecticut



Every Fredericks Armature Is Insulated!

The best armatures are insulated. If ever you order a "rewind" from Fredericks, study the job we do. Every one is insulated. The cost to you is no higher.

FORD Starter Armatures Rewound.....ALL OTHER TYPES TWO-UNIT Generator

Armatures Rewound

ALL OTHER TYPES TWO-UNIT Starter

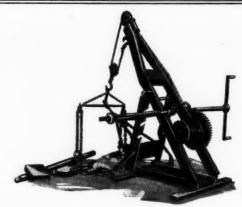
Armatures Rewound

ALL TYPES MOTOR GENERATOR Arma-

tures Rewound ... GUARANTEED to give the same satisfaction as new armatures.

The H. M. FREDERICKS CO., Lock Haven, Pa.

Rewinding Service



Compare this Crane

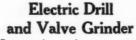
Compare this Crane—point by point. Built by STRUCTURAL STEEL DERRICK FABRICATORS. 50 ft. STEEL CABLE. No chains. SWIVEL HEAD permits pull from ANY ANGLE. Boom instantly ADJUSTABLE by one man. PROP SUPPORT from boom to ground eliminates strain on service-car. A TOW-BAR and CRADLE that makes towed car track perfectly. Positively NO SIDE-SWAY. 2½ ton capacity. Cable has tensile strength of 11,500 lbs.

Dealers, Garage and Service Station owners—the KLEIN-KRANE is the most compact, efficient, simple and economical crane ever placed on the market. Write at once for full particulars of this time and money saving piece of shop equipment.

The Klein Structural Steel Co. Bellevue, Ohio

LEIN KRANE

Get This "Pioneer" Garage Special



Greatest time and money saver, as well as money maker, for your shop-

"It Will Do The Work"

Louisville Electric Mfg. Co.
Incorporated
C. E. Willey, Pres.
J. B. McFerran, Secy.-Treas.

How much do you know about Automobile Electrical Systems?

"Automobile Electrical Systems"

Send \$3.00 for Automobile Electrical Systems by D. P. Morton, examine the book, and if not satisfied return in 10 days and we will refund your money.

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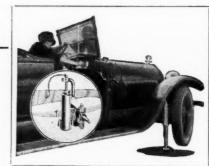
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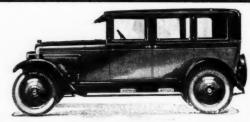
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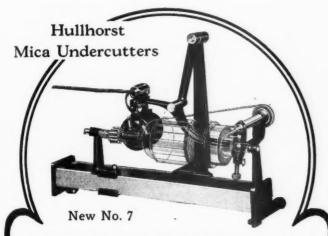
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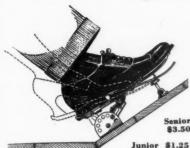


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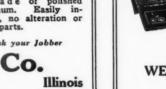
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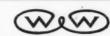


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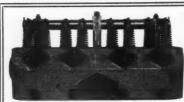
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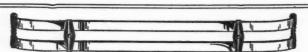


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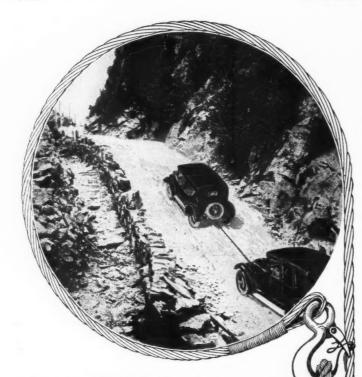
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